Business Valuation Basics for Attorneys

William P. Dukes

Abstract

Of all of the businesses in the Nation about .5% could be classified as actively traded, the other 99.5% require special treatment for valuation purposes. A number of the important issues are reviewed, all of which should be understood by all Attorneys who could have clients involved in business valuations. Issues are related to accounting practices, premiums, discounts of various sorts, required return, capitalization rates and proxies for variables not available. Most of the issues are illustrated in a practical valuation. Quantification of a number of the variables is illustrated as well.

KEYWORDS: business valuation, income approach, valuation methodologies
With more than 25 million (IRS - 2003) businesses in the U.S. and something less than 1 percent tradable in any meaningful way, valuation issues are much more important for small/closely held businesses than for large cap stocks, because the World knows about large stocks and can obtain good data on those large firms, especially those actively traded. Consequently, in this paper an effort will be made to identify some of the more important issues and indicate the source of the studies that have been made to help provide a standard method where possible.

The difficulty of assessing the “value” of small companies is that some of the variables used in the valuation process for actively traded securities are not available for small/closely-held firms; therefore, proxies for these variables must be used. Complicating the valuation exercise is the fact that practitioners and academics may use the same theory (valuation model) but differ somewhat on the nature of the variables and the way they are to be proxied. When these differences occur they will be identified and the basis for each indicated. The remainder of this paper is organized as follows. First, a discussion of valuation methodologies is presented. Then a discussion of possible accounting issues, along with a discussion of discounts and premiums is given. The paper concludes with a case illustration and a discussion of the differences between theory and practices.

VALUATION METHODOLOGIES

There are two fundamental bases on which a company may be valued:

1. As a going concern, and
2. As if in liquidation.

The value of a business is the higher of two valuations, one as a going concern and the other on a liquidation basis. This approach is consistent with the appraisal concept of the highest and best use, which requires a valuator to consider the most optimal use of the assets being appraised under current market conditions. If a business will command a higher price as a going concern then it should be valued as such. Conversely, if a business will command a higher price if it is liquidated, then it should be valued as if in orderly liquidation.

Going concern value assumes that the company will continue in business, and looks to the firm’s earning power and cash generation capabilities as indicators of its fair market value. There are many acceptable methods used in business valuation at this point of time. The foundation for business valuation arises from what has been used in valuing real estate for many years. The three basic approaches that must be considered by the valuator are:
1. The Market Approach,
2. The Asset Based Approach, and
3. The Income Approach

Within each of these approaches there are many acceptable methods available for use by the valuator. A good valuator will test as many methods as may be applicable to the facts and circumstances of the business being appraised. It is then up to the valuator’s informed judgment as to how these various values may be reconciled in deriving a final estimate of value.

**The Market Approach**

The market approach is the most direct approach for establishing the market value of a business. Using this approach, the valuator tries to locate guideline businesses that have been sold in order to make a comparison of value. This approach is similar to what is used in appraising residential real estate.

Generally, this approach is difficult to use for small, closely held businesses because guideline companies are scarce and reliable information is difficult, if not impossible, to obtain. Great care must be applied in the use of this approach, because the probability of identifying other businesses with the same products, same size, same financial condition, and same capital structure, is somewhat like trying to find a needle in a haystack.

**The Asset Based Approach**

The asset based approach, sometimes called a cost approach, is an asset oriented approach rather than a market oriented approach. Each component of a business is valued separately, and then summed up to derive the total value of the business. The valuator estimates value, using this approach by estimating the cost of duplicating or replacing the individual elements of the business being appraised, item by item, asset by asset. As an example, a business is completely based on renting/leasing farm equipment to those farmers in need of equipment they do not own personally. Each piece of equipment should be valued independently from all other pieces and then the sum of all of the items, plus the land and any building in use.

The tangible assets of the business are valued using this approach, although it cannot be used alone if there are intangible assets with value, then this approach cannot be used.
The Income Approach

The income approach or investment value approach, attempts to determine the earning power of the business rather than asset value or the market approach. This approach assumes that an investor could invest in a business with similar investment characteristics, although not necessarily the same business.

The computations using this approach are based on the value of the income produced by the business capitalized by a required rate of return, or discounting future income back to the present time. Determining the income to capitalize or the future income to be discounted requires special judgment and knowledge. No one knows what the future holds but we must make estimates based on knowledge available. Historical data is generally used as a starting point in many of the more acceptable methods. The future cannot be ignored so the valuator has to make the best estimates based on what is known about the business.

Liquidation Value

The liquidation value assumes that a business has greater value if its individual assets are sold to the highest bidder and the business ceases to be a going concern. According to Pratt (1996), liquidation is in essence, the antithesis of a going concern value. Liquidation value means the net amount the owner can realize if the business is terminated and the assets sold off in piecemeal. Pratt states that “it is essential to recognize all costs associated with the enterprise's liquidation. These costs normally include commissions, the administrative cost of keeping the company alive until the liquidation is completed, taxes and legal and accounting costs. Also, in computing the present value of a business on a liquidation basis, it is necessary to discount the estimated net proceeds at a rate reflecting the risk involved, from the time the net proceeds are expected to be received, back to the valuation date.”

Pratt continues by stating:

“For these reasons, the liquidation value of a business as a whole normally is less than the sum of the liquidation proceeds of the underlying assets.”

NEED FOR PROXIES IN THE VALUATION PROCESS

Many valuation approaches in finance are based on some version of the Capital Asset Pricing Model (CAPM). The CAPM is expectational and we have no way of knowing what will happen, nor when it will happen, because it is necessary to use ex-post data as proxies for their expectational counterparts. The CAPM is given by equation (1):
\[ E(r_i) = rf + B[E(R_m-rf)] \]  

Where:
- \( E(r_i) \) = expected or required return for firm or asset.
- \( Rf \) = the risk free rate of interest.
- \( B_i \) = the beta for the firm or asset \( i \).
- \( E(r_m) \) = the expected return on the market.

**Market Risk Premium**

A standard practice is to proxy the market by use of an index of choice. Ibbotson and Associates (2005) use the S&P 500 as a proxy for the “market.” No doubt others would prefer to use Wilshire 5000, or Russell 3000. A choice of market risk premium, \([E(r_m)-rf]\), is an Ibbotson suggested calculation done in the following manor:

\[
\frac{1+ \text{S&P 500 return}}{1+ \text{Tbill return}} = \frac{1.123}{1.038} = 1.081888-1 \approx 8.19\%
\]

Practitioners would select a 20 year T Bond where the long-run average returns on a 20-year Treasury Bond have been 5.8% to provide

\[
\frac{1.123}{1.058} = 1.0614366-1 = 6.14\%
\]

For the period 1926-2005, the long-run arithmetic average return on the S&P 500 has been 12.3 percent and the average return on the Treasury Bill has been 3.8 percent. In either case the risk premium is calculated by using a proxy for the market and a proxy for the risk free rate.

**Risk Free Rate**

We all know and accept the fact that there is no true “Risk Free Rate,” but we continue to function with differing proxies. In a survey Dukes, Bowlin and Ma (1996) found that practitioners selected T Bonds over T Bills by a substantial margin. It is instructive to note, however, that the use of Treasury bill returns as proxies for the risk free rate is not without concern. In Harrington (1987), she discusses her concern with the Federal Reserve Board intervention that takes the Treasury Bill rate out of the “pure market rate” category by pointing out that these “rates are influenced, either directly through interest rate control, or indirectly by controlling money supply…and in its pursuit of such things as employment, economic growth, and international stability…” In addition “short-term Treasury securities show significant variability over time.”
Market Return

In the calculation of the market risk premium, the market return is proxied by one's expectation of the market's return or use of Ibbotson's 80 year average (1926-2005) of the markets return. It takes a lot to change an average of 80 years, whether arithmetic or geometric mean. Even so, the recent bear market of 2000-2002, because of its severity, has lowered the long-run average annual return on the market.

Required Rate of Return

For many of us, the required rate of return means we use the CAPM, however modified from theory to proxy as a benchmark for what stocks are expected to provide in returns. Again we have Markowitz to thank for the lead even through it was William Sharpe (1963), a student of Markowitz's that gave us the CAPM in usable form.

Whether we proxy the risk free rate with T Bills or T Bonds the required return is proxied using the CAPM. The required return is used whether we are discounting, capitalizing or making comparisons. However, it is important to note the distinction between a discount rate and a capitalization rate. Discounting is used more properly when there is a series of dividends and the analyst wants to determine the present value of the series which contains a growing pattern, or the series is changing from one time period to the next, we discount each item in the series to determine the present value of the series. Capitalization is appropriate when the series is unchanging or the high's and low's offset each other to permit an average to be sufficient for definition, the average amount is divided by the required rate of return or capitalization rate to determine the value of the series.

ACCOUNTING ISSUES

The valuation of any business enterprise usually requires adjustments to financial statements because of different accounting practices followed by different firms. If audited financial statements are available, they should be used. Unfortunately, audited statements may not be available for smaller companies. On occasion the only type of financial statement available may be the income tax return for the business. In addition to the problems with available financial statements, there are a few areas of concern associated with small companies.

Officer compensation, in particular, may require an adjustment for small firms in order to represent an appropriate cost and to show the true earning power of the firm. The salary of the owner could be determined more by the earnings of
the business than any set figure. An adjustment to the owner's salary is done for valuation purposes only. When the salary consumes most, if not all, of the earnings of the firm, one way to make the adjustment is to obtain salary data from Robert Morris Associates or other industry sources. To illustrate, assume that the owner's average salary is about $500,000 annually. Data for a like size and nature of the business may indicate that a manager could be hired to perform all functions of the owner for $100,000 a year. That would leave $400,000 to flow through to before tax income for the business. The valuation would then assume earnings of the firm to follow the adjustment because any buyer would have that option.

Another issue deals with the depreciation of fixed assets. There could be a tendency for depreciation allowances to be increased in good business times and to be lowered in bad economic times due to the discretionary power of the owner of a small closely held business. If this activity is pursued the tendency could be that taxes would be minimized during years of good earnings. An analyst should be aware that this possibility could exist and to account for it in the valuation. Some business owners have been known to charge personal expenses to their businesses. Identification of these charges is difficult at best and in many cases inconsequential in amount. Looking for, identifying and justifying these charges could be more costly than the charge itself, and could be less than cost effective in looking for, identifying and trying to correct.

Some small business owners have built portfolios and show the assets as long-term assets of the business. When these assets are recognized as investments which are not needed nor used in the functioning of the business, the valuation should break out the investments, and make separate valuations of each part, one in the operation of the business and the other as a portfolio of the owner.

In a slightly different way, a business can hold excessive cash or cash equivalent in the form of CD’s or other short-term instruments. When identified as such, a firm with excess liquidity should be evaluated as such. As an example, assume that the normal working capital is $100,000, and the amount on hand amounts to $1,250,000. The business should be valued with working capital of about $100,000 and the excess of $1,150,000 should be additive to the value of the business.

**DISCOUNTS/PREMIUMS**

Because of the special nature of closely-held businesses, certain discounts/premiums are generally used to “adjust” standard valuation approaches. Several of these discounts/premiums are discussed below.
Marketability

Most small/closely-held businesses will have a problem with marketability (i.e. liquidity risk) in any sale of stock or the entire business. Marketability is one of the more important issues that must be assessed in any attempt to value small/closely-held businesses. Much time and energy have been expended in trying to quantify the amount of the discount (from an indicated value) appropriate in the valuation process.

a. Restricted Stock

A Restricted Stock (or a Letter Stock) is one that is the same as other stock that is freely traded but has a restriction placed on it because the letter stock may have been issued for acquisition or raising capital purposes but has not been registered with the Securities and Exchange Commission (SEC). Founders stock that has not been registered with the SEC falls into this same category. The difference in price between the actively traded and the restricted stock has been the subject of much work in identifying the amount of the discount. Table 1 contains a summary of eleven research efforts which have identified the spread in values between restricted and actively traded stock which are identical in all other respects. The finding is an average discount of about 32.44 percent. The restricted stock tends to sell at a price that is about 32.44 percent less than its unrestricted equivalent. The problem with this large amount of research on restricted stocks is that most small/closely-held businesses will never issue restricted stock that could be marketable in a couple of years or less and in fact, most will never be marketable.

b. Initial Public Offerings (IPO)

Another body of research that is considered to be much more appropriate for discount estimation is the Initial Public Offerings (IPO) comparisons. Emory (1995) presents data for Table 2 that covers the time period of 1980-1995. Of the 219 transactions reported in his study, only 44 were sales transactions. Most of the others were options granted. For the 44 sales transactions the median discount was 51 percent. Therefore, the better indicator would be the median of 51 percent rather than the mean of 43 percent shown.

Another series of studies using IPO data, is shown in Table 3 with a median discount of 51.9 percent, conducted by Willamette Managements Associates, and published in Pratt, Reilly and Schweih (1996).
A third series of IPO studies, as shown in Table 4, prepared by Willamette Management Associates, covering the period 1975-1992 show a median discount of 62.11 percent. If the outliers are removed the median is about 62.88 percent. If we equally weight the three series shown in Tables 2, 3 and 4 the median discount average is 55 percent, much larger and much more appropriate than the restricted stock research. This conclusion is drawn because small/closely held firms do not issue restricted stock, but in some instances small companies grow to the point that an Initial Public Offering (IPO) is the next step in growth and or expansion.

The 55 percent discount for non-marketability is justified by the empirical studies shown in tables 2, 3, and 4, but courts are more likely to “split the difference” between what the Internal Revenue Service wants and what is requested by tax payer’s representatives. Therefore, we are more likely to see non-marketability discounts of about 40 percent rather than the 55 percent justified by the empirics.

**Minority Interest**

The typical (erroneous) belief when the issue of "minority interest" is considered is that the “percentage of ownership” is the same as “percentage of control.” The value of a minority interest holding in a business is very small. Consider the following scenario. Some time ago, Mr. Small approached Mr. Big regarding his desire to acquire a partial interest in Mr. Big's oil well servicing and supply company. The agreement reached was that for $X, Mr. Small would have a 25 percent interest in the business. Some time later Mr. and Mrs. Small had a disagreement and they agreed to part ways. Since they could not agree on the value of Mr. Small's 25 percent, the issue was referred to the court to decide the value of a 25 percent interest in an oil field business that was earning very little if anything. Mr. Big held 75 percent interest and Mr. Small held 25 percent interest. No matter what the issue Mr. Small could not outvote Mr. Big. (Someone suggested that Mr. Small bought the right to be employed). As long as Mr. Small performed his assigned function he would receive his salary. He was satisfied with his salary and Mr. Big was satisfied with Mr. Small's performance. After sitting through many days of a trial, Mrs. Small decided to accept the pretrial offer made to her by Mr. Small. If forced, her 12½ percent could not be sold and would provide no income. The business had never paid a dividend. Having an ownership of 12 ½ percent of nothing wasn't as good as the pretrial offer.

Another illustration of the difficulty in placing a value on a minority interest is the Family Limited Partnership. In the "Y" Family Limited Partnership, Mr. Y had a 2% ownership interest as the General Partner. In total there were six members of the "Y" Limited Partnership. The General Partner held
2%, and Limited Partners held the other 98 percent. The authority of the General Partner is described by a paragraph in the Limited Partnership Agreement. "The Managing Partner shall have exclusive control of the Partnership.... Subject to the limitations in this agreement, the Managing Partner shall have the authority to take any action deemed to be necessary, appropriate, or convenient relating to the management of the Partnership, including, but not limited to the powers to:
(a) Sell, convey, exchange, convert, grant an option, assign, improve, build, manage, operate, and control Partnership Property.
(b) through (t)
(u) Do all acts, take part in any proceedings, and exercise all right and privileges as could an absolute owner of Partnership property...." The omitted sections (b) through (t) spell out in great detail the authority given to the General Partner. In addition, the limitations on the Limited Partners are complete as shown in a paragraph of the partnership agreement. The Limited Partners shall not have the obligation or the right to participate in the control of the Partnership business. The Limited Partners shall not do any act, deed, or thing that will cause the Limited Partners to be classified as a General Partner of the Partnership. Thus, when the Family Limited Partnership was formed the value of the minority interest was greatly reduced.

Overall, the value of a “minority” interest varies greatly with the situation. Limited Partnerships are formed for tax purposes because the value of property held by a limited partnership is much more difficult to sell because the limited partner has no control over what is to be done with the property.

d. Premium for Control

The “equity” value of a corporation that is traded on the New York Stock Exchange is the number of shares issued and outstanding, multiplied by the per share price at a point in time. As happens very frequently when one corporation purchases all of the stock of another corporation, the buyer receives total control of the target company that was not available when a few shares of the target company were owned. Total control means that all functions, wishes and desires of the target company are transferred to the purchasing company. The value above the market capitalization is the “premium” a business pays to receive total control of a target company. The premium can vary quite widely.

Mergerstat Review 1993 reports the 20 largest deals going private for 1979-1993. The premiums paid ranged from 1 percent to 140 percent with an average premium of 45.9 percent. In a much larger sample for the time period 1984-1993 the control premium paid averaged 39.12 percent, with 13.2 percent of
the transactions being over 80 percent and approximately 64 percent of the transactions with premiums of 40 percent or less.

In other reports, of premiums paid, Keown, Scott, Martin and Petty (1996) report on the AT&T purchase of NCR, a premium paid that amounted to 129 percent. Pratt, et al (1996) reported the premium paid by PCI acquisition of 129 percent for payless Cashways. Slater (1987) reports on the Gulf Oil takeover in which a premium of 110 percent was paid, and in the Unocal Oil attempted takeover the price paid on the stock buyback contained a 100 percent premium.

Charles L. Elliott (1993) CFA, ASA and principal of Howard, Fraser, Baker and Elliott, Inc. made reference to published data on control premiums. He reported premiums paid for control in the years 1985-1991 ranged from 37.6 to 54.6 percent and averaged 46.7 percent. Brigham and Gapenski (1996) report that control premiums average about 30 percent in hostile tender offers, while in friendly mergers the premium is about 20 percent.

The “premium for control” and the “minority position” are related. As an example, if the stock is selling at 80 and the control stock price is 100, the premium paid is 25 percent (20/80). However with the price for control at 100, the minority position is the same $20, but it is only a discount of 20 percent (20/100). The larger sample for premium for control is probably the Brigham and Gapenski study. The straight average for the hostile takeover is 30 percent but only 20 percent for friendly mergers, would be an unweighted 25 percent for the control premium, which is a 20 percent minority position. With mergers considered to be friendly the premium would be 20 percent (16/80), and the minority position 16.67 percent (16/96). In either case the “market” determines the amount of the premium by negotiations. If however, there is a “bidding war”, such as in the recent purchase by Johnson & Johnson for the Pfizer Consumer Division, an additional 15 percent ($16.6Bil/$14.4Bil) could be paid by the winner.

e. Key Man Discount

The “Key Man” discount can be defined as being the loss of efficiency until someone is trained sufficiently to replace the key man that justifies the discount. Maher’s (1977) approach to a discount for a “Key Man” is to increase the required return in the valuation process. Thus, if 20 percent is the appropriate required return, he would increase it by 30 percent (.2 x 1.3 = .26) to provide a required return of about 26 percent. If we use the Key Man discount in the same way as the non-marketability and minority interest discount the amount of required return change would be from .26 down .06 to .2, therefore the equivalent of the 30 percent increase in the required return would be a discount of about 23
percent (\(\frac{0.06}{0.26} \approx 0.23\)). In like fashion, a required return increase of 20 percent would have a traditional discount equivalent of about 16.67 percent.

Justification for the required return increase of 30 percent (discount about 23 percent) is because a "key man" might leave for whatever reason and a successor has not been found or identified, and could take about five years to train the replacement for the key man. There should be a 20 percent increase in the required return, or a 16.67 percent traditional discount, if the successor has been identified. It is the loss of efficiency until someone is trained sufficiently to replace the key man that justifies the discount. One authentic illustration of the importance of the key man discount is the sales manager of a business who had close ties with most of his largest customers. Some of the larger customers told the sales manager that they would follow him if he decided to move.

**CASE ILLUSTRATION**

The purpose of this section summary is to pull together many of the factors found quite frequently in the valuation of small companies. The data provided contains an indication of average earnings for a nine-year time period of $340,000 that varied from $120,000 to $660,000, with no indication of growth in the time period ending in 2006. The data are after income statement adjustments for officer compensation (noted earlier), among other items. These earnings provide no discernible trend therefore a capitalization rate is employed in the valuation process. The capitalization rate is based on 2006 current data using Pratt’s “build up” approach as follows:

- **Risk Free Rate**: 5.42%
- **Equity Risk Premium**: 6.14%
- **Small Cap Premium**: 4.15%
- **Additional Risk**: 2.00%
- **Capitalization Rate**: 17.71%

It can be noted that the capitalization rate of 17.71 percent is very close to the return received by small companies of 17.4 percent. (Ibbotson 2005)

Nine years of average earnings capitalized at a rate of 17.71 percent (0.1771) is:

\[
\frac{$340,000}{0.1771} = $1,919,819.30 \quad \text{"As if actively traded" value}
\]

\[
767,927.72 \quad \text{Non-Marketability discount (40%)}
\]

\[
1,151,891.58 \quad \text{Value after discount}
\]

\[
191,981.93 \quad \text{Minority discount 16.6667%}
\]

\[
959,909.65 \quad \text{Value after minority discount}
\]

\[
160,304.91 \quad \text{Key Man discount 16.7%*}
\]

\[
$799,604.74 \quad \text{Firm value after all discounts}
\]
*The Key Man discount is shown to illustrate how it is used. However, in the situation described in this illustration, there was no “Key Man” in reality, so the value amounted to $959,909.65

DIFFERENCES BETWEEN THEORY AND PRACTICE

Having discussed the various issues pertaining to valuing small businesses and illustrating the approach to the discounting process, attention is turned to theory and the standard dividend valuation model, which can be modified into its earnings multiple (P/E) version. The standard dividend valuation model is given by the so called Gordon Model, either in dividend or P/E form as shown in equations (2) and (3).

\[ P_0 = \frac{D_1}{(k-g)} \]  
\[ \frac{P_0}{E_1} = \frac{(D_1/E_1)}{(k-g)} \]

Bing (1971) reported the results of a survey that shows a wide divergence of tools used by academics in comparison with practitioners. In the most recent edition of Jones Investments (2004), it is quite clear that dividend discount models are primary, but in an attempt to get a P/E model into play he calculates what the P/E should be by a manipulation of what is commonly known as the constant growth model. In Bing’s survey 2.3 percent of the responses were that some form of discounting dividends was used. In a recent survey of practitioners, Dukes, Peng and English (Forthcoming), only one percent of the responses favored use of dividend discount models in any form.

CONCLUSIONS AND IMPLICATIONS

When an analyst completes a valuation project, but before he/she turns in the report, the final question to be answered is whether or not the results are reasonable. Is it believable? Would I accept this report if prepared by an unknown analyst? It would be nice if we had a benchmark against which we could place the report for a reality check. Fortunately, Pratt [1996] and others have faced this issue and have provided guidance. Depending on the risk involved, the return for a buyer at the value found should fall within the range of 20 percent to about 40 percent, with most valuations providing returns of 25 to 35 percent. After all, the value found should be close to what a Venture Capitalists or business man with an expertise necessary to operate the business involved would be willing to invest. An active stock market provides such guidance for actively traded securities.
The un-weighted average of all of the non-marketability (IPO) discounts is 55 percent, but the range shown in Table 3 varies from 31.8 percent to 73.1 percent and in Table 4, the range is 39.1 percent to 80.5 percent. Therefore the mean of 55 percent is not a requirement for all valuations. The analyst has the responsibility to consider the specific situation which will vary from one valuation to another. In addition, all situations will not have a “key man” because of the depth of management and the training of others to fill in key positions, which is the situation in the summary illustrations of the various discounts. As an example, if we eliminate the key man discount as mentioned earlier, the ending value and therefore the return would fall within the desirable range suggested by Pratt. \[\$1,919,819.30 \times 0.6 = 1,151,891.58 \text{ and } 1,151,891.58 \times 0.8333 = 959,909.65\] Earnings $340,000/$959,909.65 value =35.4 percent return.

Overall, it is hoped that this article provides attorneys with a better understanding of difficulty of assessing the “value” of small/closely held businesses. It is also hoped that this article provides attorneys with a better understanding of key issues associated with the valuation of small/closely held businesses.

REFERENCES


Robert Morris Associates, Annual Statement Reports.


<table>
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<tr>
<th>Study</th>
<th>Years Covered in Study</th>
<th>Average Discount (%)</th>
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<tr>
<td>SEC Overall Average&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1966-1969</td>
<td>25.8</td>
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<tr>
<td>SEC Nonreporting OTC Companies&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1966-1969</td>
<td>32.6</td>
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<tr>
<td>Gelman&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1968-1970</td>
<td>33.0</td>
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<td>Trout&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1968-1972</td>
<td>33.5</td>
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<td>Moroney&lt;sup&gt;d&lt;/sup&gt;</td>
<td>1969-1973</td>
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<td>Maher&lt;sup&gt;e&lt;/sup&gt;</td>
<td>1978-1982</td>
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<td>FMV Study&lt;sup&gt;k&lt;/sup&gt;</td>
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Notes:


g. From Willamette Management Associates study (unpublished).

h. Although the years covered in this study are likely to be 1969-1972, no specific years were given in the published account.

i. Median discounts.


k. Lance S. Hall and Timothy C. Polacek, "Strategies for Obtaining the Largest Discount," Estate Planning, January/February 1994, pp. 38-44. In spite of the long time period covered, this study analyzed only a little over 100 transactions involving companies that were generally not the smallest capitalization companies. It supported the findings of the SEC Institutional Investor Study in finding that the discount for lack of marketability was higher for smaller capitalization companies.
Of the 219 transactions, only 44 were sales transactions. Most of the others were options granted. For the 44 sales transactions, the mean discount was 49% and the median was 51%. Therefore, the better indicator would be mean 49% and median 51%, rather than 46.4% and 46.1% respectively. (From Page 159, Business Valuation Review, December 1995.)

<table>
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<th>Study</th>
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<th># of Qualifying Transactions</th>
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<td>1992-1993</td>
<td>443</td>
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<td>44%</td>
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<tr>
<td>1989-1990</td>
<td>157</td>
<td>23</td>
<td>45%</td>
<td>40%</td>
</tr>
<tr>
<td>1987-1989</td>
<td>98</td>
<td>27</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>1985-1986</td>
<td>130</td>
<td>21</td>
<td>43%</td>
<td>43%</td>
</tr>
<tr>
<td>1980-1981</td>
<td>97</td>
<td>13</td>
<td>60%</td>
<td>66%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,509</strong></td>
<td><strong>219</strong></td>
<td><strong>45% Mean</strong></td>
<td><strong>43% (Mean)</strong></td>
</tr>
</tbody>
</table>

### TABLE 3
Summary of Discounts for Private Transaction P/E Ratios Compared to Public Offering P/E Ratios Adjusted for Changes in Industry P/E Ratios

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Number of Companies Analyzed</th>
<th>Number of Transactions Analyzed</th>
<th>Median Discount (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975-1978</td>
<td>17</td>
<td>31</td>
<td>52.5</td>
</tr>
<tr>
<td>1979</td>
<td>9</td>
<td>17</td>
<td>62.7</td>
</tr>
<tr>
<td>1980-1982</td>
<td>58</td>
<td>113</td>
<td>56.5</td>
</tr>
<tr>
<td>1983</td>
<td>85</td>
<td>214</td>
<td>60.7</td>
</tr>
<tr>
<td>1984</td>
<td>20</td>
<td>33</td>
<td>73.1</td>
</tr>
<tr>
<td>1985</td>
<td>18</td>
<td>25</td>
<td>41.7</td>
</tr>
<tr>
<td>1986</td>
<td>47</td>
<td>74</td>
<td>47.4</td>
</tr>
<tr>
<td>1987</td>
<td>25</td>
<td>40</td>
<td>43.8</td>
</tr>
<tr>
<td>1988</td>
<td>14</td>
<td>17</td>
<td>51.8</td>
</tr>
<tr>
<td>1989</td>
<td>9</td>
<td>19</td>
<td>50.3</td>
</tr>
<tr>
<td>1990</td>
<td>17</td>
<td>23</td>
<td>48.5</td>
</tr>
<tr>
<td>1991</td>
<td>29</td>
<td>38</td>
<td>31.8</td>
</tr>
<tr>
<td>1992</td>
<td>37</td>
<td>83</td>
<td>51.7</td>
</tr>
<tr>
<td>1993</td>
<td>51</td>
<td>110</td>
<td>53.3</td>
</tr>
<tr>
<td>Total</td>
<td>432 (Total)</td>
<td>827 (Total)</td>
<td>51.9 (Mean)</td>
</tr>
</tbody>
</table>

SOURCE: Willamett Management Associates, unpublished studies
The average of the Median Discounts for the eight time periods is -62.11%.
If we omit the highest and lowest discounts, the average is -62.88%.


<table>
<thead>
<tr>
<th>Time Period</th>
<th>Number of Companies Analyzed</th>
<th>Number of Transactions Analyzed</th>
<th>Median Discount (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975-1978</td>
<td>28</td>
<td>59</td>
<td>64.3</td>
</tr>
<tr>
<td>1979</td>
<td>11</td>
<td>30</td>
<td>68.2</td>
</tr>
<tr>
<td>1980-1982</td>
<td>98</td>
<td>185</td>
<td>68.2</td>
</tr>
<tr>
<td>1984</td>
<td>53</td>
<td>94</td>
<td>80.5</td>
</tr>
<tr>
<td>1985</td>
<td>39</td>
<td>75</td>
<td>61.3</td>
</tr>
<tr>
<td>1990*</td>
<td>38</td>
<td>68</td>
<td>50.4</td>
</tr>
<tr>
<td>1991</td>
<td>75</td>
<td>152</td>
<td>39.1</td>
</tr>
<tr>
<td>1992</td>
<td>86</td>
<td>216</td>
<td>64.9</td>
</tr>
<tr>
<td>Total</td>
<td>428 (Total)</td>
<td>879 (Total)</td>
<td>62.11 (Mean)</td>
</tr>
</tbody>
</table>

*Data not available for the years 1986-1989

The average of the Median Discounts for the eight time periods is -62.11%.
If we omit the highest and lowest discounts, the average is -62.88%.