Analysis Of The Pricing Of Limited Partnership Interests Traded In The Secondary Market & The Implications For The Valuation OF Private And Family Limited Partnerships

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Introduction

If the 70's and the 80's were the decades when syndicated limited partnership ("LP") interests were purchased (most estimates are in the range of $130 billion) (1) , the 90's and beyond will be the decades when these same partnership interests come home to roost in the estates and trusts of wealthy professionals, pension plans, and IRAs. Without careful and meticulous work on the part of appraisers valuing these partnership interests, many practitioners will incorrectly complete the 706, 709, 5498, and 5500 tax forms, resulting in potential penalties or the over-payment of estate taxes.

In addition to the syndicated deals, an unknown amount has been invested buying privately sponsored limited partnerships. While investors hoped for tax-advantaged income, brokers and syndicates were delighted with high up-front fees. With an expected holding period as short as five years, most investors did not think they would still be holding their interests 10, 20, or more years later. Worse, each year required the filing of K-1s and other tax forms.

Professionals involved with trusts and estates are increasingly aware of the difficult job of valuing non-publicly traded LPs and the growing significance of the use of family limited partnerships ("FLPs") in estate planning. In the past, fair market values for non-publicly traded LPs have been based on "informed estimates" or on the following sources:

1. The original purchase price (with little consideration as to the meaning of fair market value);
2. A general partner's estimate (usually a pro-rata portion of the assets of the partnership); or
3. Book value.

The standard approach to developing, documenting and applying discounts to fair market values has been an exercise in playing the numbers. Those required to use or attempting to apply a discount to an otherwise established trading price typically find the most and least defensible position to take is applying the average discount from the most recent study of a security that is most similar in nature and circumstance to the one they are attempting to value. However, many questions, concerns and problems arise regarding the accuracy of the discount conclusions that are based on the law of averages, as discussed under "Traditional Approaches to Valuation," below.

The results of the ongoing research on which this article is based reveal that the fair market value of a non-publicly traded LP and, by proxy, a FLP, can be predicted with a great deal of accuracy once the underlying characteristics of the subject LP are compared with the syndicated LPs in our model.

We found that market discounts from net asset value ("NAV") (2) are much larger than those provided in recent tax court decisions, especially for partnerships which are not currently making distributions, where our study indicates the discounts may approach 80%. The model developed in this study provides a methodology to refine the determination of the appropriate discount and eliminates the need to rely arbitrarily on an average discount.

In addition to reporting our findings, this article discusses the existing valuation methodologies, identifies and describes the secondary market for syndicated partnership interests, discusses the factors that give rise to the discounting of a partnership's NAV when investors trade these securities in the secondary market, and demonstrates how this market data is used to value private and FLPs.

Traditional Approaches to Valuation

The role of the appraiser is to provide a well documented opinion of value, as contrasted with other professional advisors who provide other information regarding legal, tax, accounting and business issues. In determining the value, the appraiser must rely upon the nature of the specific interest, such as its legal and tax status, from the attorney or CPA. Therefore, these advisors must provide the appraiser with certain underlying facts and assumptions regarding the history, condition, and expectations for the operating entity or property.

Furthermore, its status as well as the status of its interestholders will be impacted by such issues as fiduciary rights, buy/sell agreements and liquidation rights, to name only a few exogenous factors that bear upon value.

There have been many studies over the past 20 years, some undertaken with a high degree of integrity that have examined empirical data discounting for factors that constrain or temporarily hinder a security's liquidity. Usually, the most available or widely published findings of these studies provide the range of pricing discounts (or premiums) observed, and the mean and median of the range. Valuation practitioners are provided with the findings to cite a particular study of trading in REITs or restricted stock, but not the supporting data of the specific factors or circumstances that give rise to the market's requirement for a particular level of discount for a security which is routinely valued in the market by buyers and sellers.

As mentioned above, the most and least defensible position to take in applying a discount to an otherwise established trading price is by applying the average discount from a similar security. While using the average discount is not an aggressive position, the range of discount can be extremely broad. A discount at either end of the range could be more supportable only if all the data were available to compare to the subject's particular features and situation. Citing the mean or median is merely a convenience, and not grounded in the reality of the markets. Case specific examination or analysis is required when one resorts to the "law of averages."

Problems with Traditional Discounts

The first troubling problem regarding the accuracy of discounts based on the law of averages is that the wide range of discounts creates uncertainty as to whether the facts and circumstances of any particular partnership, if fully analyzed, would result in a very low discount (say 5%), a very high discount (say 95%), or somewhere in between. Picking the average ignores the dynamics of the marketplace, and the investment logic that accompanies any risk/return tradeoffs. In other words, since the market pricing of partnerships does not default to "the average" or some central tendency for discounting the NAV, then neither can the valuation of a private partnership if the conclusion is to represent even a modest degree of integrity.

Second, too much money may have been left on the table. A number (30 percent) that seems like a reasonable adjustment for illiquidity is not grounds for its application and a poor attempt for justification at trial. In addition, just because the valuation and related discount do not appear overly aggressive is no assurance the IRS will accept a modest discount, especially a poorly researched one with weak documentation. What's worse for the client is claiming a low or even the average studied discount when investors in the market analyze the facts and circumstances of the particular partnership and price the interest to yield 14 percent resulting in an actual valuation or price in the marketplace that is merely 60 percent of the partnership's underlying NAV. Yet this happens all of the time. Conversely, claiming a larger discount upon a challenge from the Service may make the burden of proof on the taxpayer greater under the Federal Rules of Civil Procedure on evidence applicable to United States Tax Court litigation.

In **Buffalo Tool And Die Manufacturing Co., Inc.**, 42 T.C. Memo. 841, 1981-457, the Court rejected both the petitioner's and respondent's valuations because neither could sustain their respective conclusions based on their analyses in light of the facts of the case. Instead, the Court performed its own analysis (which it did not reveal) to arrive at the value of the items, saying:
"We think it sufficient to note that we have done the best that we could with a record that reflects a variety of infirmities, particularly infirmities in the testimony of the three witnesses who were offered as being knowledgeable as to the values which the Court is required to determine the context of the factual situation presented herein."

Third, the tax court is on record that it will not accept the simple application of an average taken from a study bearing a dubious relationship to the private partnership under consideration. In the **Estate of Edgar Berg**, T.C. Memo. 1991-279, the Tax Court, referring to petitioner's two appraisers, dismissed an appraisal of discount for lack of marketability as "unconvincing and insufficient to meet petitioner's burden of proof," because it offered no analysis of the relevant factors of the specific stock interest at issue. The appraiser merely cited five studies regarding restricted stock and the average discount for lack of marketability during a 16 year period. No analysis of the private company or nexus to the securities comprising the five studies was provided. A conclusion of discount for lack of marketability instead relied on:

1. a prior tax court decision, and
2. a discussion of the relationship between the U.S. Government long-term bond rate and an investment in the subject's stock, and the five restricted stock studies without analysis.

The Court ruled that reliance on the prior decision (3) was a mistake, that the appraiser failed to explain relevance of the rate of return offered by Government bonds to the evaluation of the immediate stock at issue, and that the citing of certain restricted stock studies "offered no analysis of the relevant factors of the specific stock interest at issue."

The second appraiser for the petitioner offered the following argument (which is presented here in its entirety) to justify a 40 percent discount for lack of marketability.

"Discounts related to marketability customarily range from 10 percent to 90 percent and the midpoint of the range is generally 30 to 40 percent (according to industry and Security and Exchange Commission studies.)" The Court noted that the appraiser did "...not identify the industry and Security and Exchange Commission findings and studies to which he refers...," and that since the appraiser offered "...no analysis of the appropriate amount of the discount...," the appraisal was regarded as "irrelevant."

Contrast the above lack of marketability appraisals that the Court found had no foundation with the approach taken by the appraiser for the Service. After discussing the discount in general terms, the respondent's appraiser "...then discusses the various salient factors affecting the extent of the discount...," and then analyzed the subject company with respect to these same salient factors affecting the marketability of shares under consideration. Based on the point by point presentation of factors affecting the marketability of the shares of public companies, and comparison analysis to the subject, respondent's appraiser methodically asserted his discount for lack of marketability. The Tax Court embraced it as follows:

Respondent's Appraiser: "...begins his analysis with a comparison of restricted versus unrestricted blocks of stock. We find this aspect of his appraisal unpersuasive. However [he] then examined specific factors which determines the amount of a discount for lack of marketability, and applies these factors related to the value of the descendant's interest in [the subject company]... [the respondent's appraiser] is convincing and superior to that of petitioner's expert witnesses."

The Court provides some discussion regarding the relative credentials of each side's experts, and concludes its opinion with:

"Due to petitioner's failure to offer evidence showing that a greater discount for lack of marketability is warranted, and due to the convincing analysis offered by respondent in support of his determination, we sustain respondent's determination that the appropriate discount for lack of marketability is 10 percent."

At the end of the opinion the Court added that the petitioner's reporting of the value in this case *"...demonstrates a lack of effort to reasonably determine the appropriate discounts... In addition, the expert reports submitted by petitioner were lacking in substance and analysis."* (4)

A study of the facts of this case and the Court's opinion provides a clear directive of how, and how not, to develop a compelling position on discounts to the Tax Court if you expect to be persuasive. We urge an analysis, comparison and logical presentation accompany every opinion in support of the valuation and the discounts applied. Whether the subject is an S-corporation, C-corporation, limited liability company, partnership (general or limited) or undivided interest in real property, the findings in **Berg** are relevant to the procedures and methodologies used when considering issues of pricing, discounting and fairness of private securities and financial transactions involving the owner's economic interests.

Designing Family Limited Partnerships

Family limited partnerships are being formed with increasing frequency today to manage assets and provide a means to effect a succession plan. FLPs are structured in a manner comparable to syndicated partnerships (5) that have been sold to the public and are traded through individuals and brokers who specialize in efficiently matching buyers and sellers in the secondary market for LPs. Syndicated partnerships are far and away the best proxy for arms' length transactions in a comparable security to the FLP; far better than a REIT, a listed real estate holding corporation, or other traded securities.

FLPs can be structured, operated and administered to mirror LP interests for which a secondary market exists. Like the syndicated partnerships, various assets are placed in the FLPs, including corporations, retail shopping centers, business parks, commercial and industrial buildings, apartment buildings and condominiums, storage facilities, land and various types of operating assets. There are typically one or more general partners, usually with sole authority and voting power to administer the partnership's operation, manage its assets, declare and make cash distributions and generally execute the business of the partnership as defined in the partnership agreement. (6)The partnership agreement sets forth the rights, entitlements of each class of interest (general and limited), the partnership's place of business, business purpose, terms of operation, computation for determining capital accounts and allocation of profits, capital gains and distributions. The agreement also governs the financial, operational and administrative affairs of the partnership and the rights and characteristics of equity interests.

Syndicated and non-syndicated partnerships are formed with a designated general partner, usually a professional or partnership manager experienced in administering and conducting the affairs of a partnership holding specific types of assets, such as mini warehouses, or retail shopping centers, or a combination of disparate assets. The general partner typically receives a fee for managing the partnership and cash distributions once certain hurdles are achieved in the return of investment or yield for the limited partners. A formula for the distribution of sales proceeds is provided, usually in relation to capital account balances; typically, the limited partners are "made whole" before the general partner participates in any gains from the sale of the assets of the partnership.

Contrasting FLPs and Syndicated Partnerships

The first fundamental difference between syndicated partnerships and FLPs involves the experience of the general partner in operating and administering such a business entity. FLPs generally do not designate professional managers as the general partner, but rather the current

owner of the assets who is forming the FLP. Therefore, the management risks are more pronounced for the FLP and consequently greater for the limited partners of the FLP than for their syndicated partnership counterparts.

The second significant fundamental difference is in asset risk. Syndicated partnerships usually hold many assets, with a broad geographic diversification. This numerical and geographic diversity of assets, even of a single type (7) provides some spreading of risk of the partnership compared to one with few assets and limited geographic dispersion. The reduced portfolio risk of the syndicated partnership is typically not enjoyed by the interests of the FLP which are usually structured with one significant asset such as an apartment house, shopping center or building and several lesser properties. The extremes in geographic and market risks found in a FLP typically are absent in the syndicated partnerships.

The third significant fundamental difference is the distribution of cash prior to the partnership's liquidation. An investor in a syndicated partnership usually has an expectation for current income of cash distributions based on some formula relative to the partnership's operations satisfying certain criteria or financial hurdles, as provided in the limited partnership agreement. Income derived from the operating surplus or gains from the sale of assets are sources of cash that provide the limited partner with an economic benefit which the secondary market can use as a basis for pricing the security. In contrast, an investor in a FLP is aware that current income, if any, could well be (and typically is) only enough to cover their portion of the tax liability allocable from the partnership's taxable income. The general partner of the FLP in all likelihood has less motivation or requirement to sell assets and generate a return of capital to a third party investor, than does the general partner of a syndicated partnership. Therefore, the expected return on an investment in an FLP is even more remote than it is for a syndicated partnership.

The fourth significant difference is the relative lack of any organized secondary market for FLP interests. The conventional measures used in pricing LPs severely punish those that do not provide a track record for distributing cash from current income or return of capital. Were the FLP tradable, investors could expect to get hammered for the absence of these economic benefits. Removing the most obvious vehicle for liquidity from a security with relatively undesirable investment attributes is virtually unforgivable because the holding period for this economic bust would be perceived as indefinite. *A third party buyer of an interest in the FLP would invest because he expects an unusually large gain on the sale of the partnership's asset(s), and is prepared to wait perhaps indefinitely for this blessed event to occur.*

The Tax Reform Act of 1986

The Tax Reform Act of 1986 contained important changes which profoundly affected the market for limited partnership interests. In addition to lengthening the depreciation period for most real estate assets, this collection of laws also divided income into three separate categories: passive, portfolio, and active. Significantly, active income, which included an individual's wages, could no longer be offset by passive losses from LPs; the lure of using the losses from a limited partnership to offset other income basically disappeared over the next few years. Yet the partnerships continued to be managed by general partners interested in perpetuating their stream of management fees, at the same time creating passive losses which investors were loath to do anything due to the potential tax liability from recapturing depreciation.

After the 1986 tax act, the allure of LPs quickly faded. As the partnerships were financially unsuccessful, investors were no longer interested in purchasing additional investments, and there was little effort on the part of the sponsoring parties to either sell off the partnership assets or to spend a great deal of time informing the investors as to the current status of their investments.

The Secondary Market for Non-Publicly Traded Limited Partnership Interests

On November 29, 1989, The Wall Street Journal initiated a quarterly series of articles concerning both the status of LPs and the sale prices. Finally, the burgeoning secondary market for LP interests gained some credibility. Thereafter, various updates appeared in The Wall Street Journal, informing readers and investors of the trade prices of the various LP interests. When faced with the reality of what the LP interests were trading at, many investors began considering buying or selling interests and the market continued to become more efficient, narrowing the spreads between buyers and sellers. Out of the thousands of syndicated LPs that originated primarily in the 70s and 80s, only about 200 to 300 trade with any regularity in the secondary market. Approximately $100 to $200 million (face value) in partnership units trade in a calendar year.

The secondary market is primarily made up of:

1. secondary market firms, which match buyers and sellers, and are motivated by commissions (although some firms have acted as market makers);
2. individual buyers and sellers, who are motivated by yield, familiarity with the general partner and partnership, long-term values, real estate as an investment and sentimentality (8); and
3. institutional funds, which oftentimes bundle up purchased units in partnerships to sell to new investors.

When selling these partnerships, the difference in offer prices from buyers is often quite large. Why the wide disparity of bids? First, there is no central "quote service," where a bidder may be able to sell what the current market is for the interest. Second, many of the bids are from individuals (either directly or through intermediaries such as secondary market brokers), who may have a personal preference to pay a set amount or, in the case of "low bidders," are perennially throwing out "garbage offers."

Unlike the stock market, daily "quotes" are not available in the secondary market, and price spreads are as much as 30% to 50%, depending upon the buyer, the partnership being sold, and the time of the year. (9) A potential buyer or seller typically cannot look at the business section of the morning paper to find the trading price of a favorite syndicated partnership. Instead, it may take from two days to four weeks to receive some pricing indication, which may be merely an "approximation" of a price, and not a firm bid at all. To add to the difficulty, an actual sale may require four months to complete, as many general partners will not allow interests to be transferred except on a quarterly basis.

Once a price is agreed upon by both buyer and seller, the interest must then be transferred into the name of the buyer. With secondary market brokers, the actual transfer of the interest is usually managed by the broker. With individual buyers, the actual transfer is sometimes done by the buyer and sometimes the seller usually using an Assignment of Interest supplied by the general partner. The transfer process takes approximately two to three months, with most general partners acknowledging the transfers at the end of a quarter. Consequently, most buyers will subtract expected distributions from the check sent to the seller.

The Limited Partnership Study and Resulting Model

By studying actual market transactions in limited partnership interests, we sought to find relationships between market trading prices and quantifiable measures of financial performance,which could then be applied to private and FLPs. To be useful, the financial variables had to be available for the typical private or FLP. For example, we could not use published financial strength ratings for the partnerships studied, because the same ratings would not be available for the non-traded partnerships we seek to value.

The analysis undertook to compare the FLP against similar LP interests which the market has priced, or valued, by comparable quantifiable factors that measure a partnership's performance and financial condition. As with any security, certain financial measures are significant. We found that the most significant determinants of the LP's trading price are current cash distributions, NAV, operating surplus (similar to cash flow), and initial dollar investment. The most significant determinants of current yield are the ratios of distributions to the following factors: book value, initial dollar investment, NAV, and operating surplus. For the purpose of identifying and isolating the syndicated partnerships most comparable to the FLP, revenues, book value, net income, and debt were examined, as well.

Various financial measures for each syndicated partnership were calculated based on available information. The most salient financial factors for partnership analysis were compared to the FLP to examine how the FLP measures up to the averages of the appropriate category of syndicated partnerships. The FLP's specific financial factors were then compared to the same factors of specific syndicated partnerships within its category to determine how well it stacks up in a "peer" review. Since the market has valued the FLP's peers, and provided yields and the trading price discount to NAV for certain levels of risk and performance, viable judgments about how the secondary market would price the FLP, were it exposed to the same investors for arms' length trading, can be concluded through the compelling empirical evidence observed in today's LP secondary market.

Ultimately, the analysis and comparison exercise develops a "fit" for the FLP within its asset-based partnership category, and results in identifying those syndicated partnerships that have the most closely comparable operating performance, track record and capability for cash distributions and financial condition. The FLP's required yield and trading price to NAV are then calibrated to the partnerships determined most comparable through this process. We believe there is no better mechanism to develop the fair market value of private and FLP interests than by pricing them based on accurate market data from the most comparable traded LPs.

The Statistical Analysis of the Traded Limited Partnerships

Drawing on information published by Partnership Profiles, Inc. (10) for about 600 partnerships and prices paid for partnerships as reported by LP traders, we developed two sets of financial data which included only those partnerships for which financial measures, including NAV and trading price information, were available. These traded partnerships with their financial measures were entered in a database. Records with incomplete information were eliminated, resulting in data sets for two nine-month periods: 1992/93 Data Set: 178 partnerships with data from the periods between June 30, 1992 and March 31, 1993. 1993/94 Data Set: 109 partnerships with data from the periods between June 30, 1993 and March 31, 1994.

We extracted 15 data items, including seven descriptive characteristics and the following eight financial characteristics:

- Total Revenue
- Net Income (excluding extraordinary items)
- Operating Surplus
- Current Distributions
- Debt
- Book Value
- Net Asset Value
- Initial Unit Size

Trading prices were averaged for the two six-month periods January through June 1993 and January through June 1994 (for the respective data sets), to smooth out the effect of unusual pricing highs and lows. NAVs reported by the partnerships were either the result of an independent appraisal or were estimated by the General Partners. (11) The source of the appraisal was coded into the data and considered in the analysis which follows. Since trading prices were expressed in "per unit traded" terms, and since we needed to compare partnerships of vastly different sizes from the perspective of an individual investor, all of the financial items were converted to a per unit basis.

We then selected 19 analytical ratios (Table 1) known to be important factors the market considers, based on our experience in valuing the securities of closely held businesses. The analysis described below was designed to select those ratios that are the strongest predictors of value.

Table 1: Analytical Ratios Used In The Study

Net Income/Book Value	Debt/Cost
Net Income/Initial Unit Size	Distributions/Book Value
Net Income/NAV	Distributions/Initial Unit Size
Net Income/Revenue	Distributions/NAV
Operating Surplus/Book Value	Distributions/Operating Surplus
Operating Surplus/Initial Unit Size	Distributions/Revenue
Operating Surplus/NAV	Trading Price/NAV
Operating Surplus/Revenue	Discount to NAV
Debt/Book Value	Yield (distributions/trading price)
Debt/NAV	

Next, we calculated simple correlations between these independent variables and the discount to NAV, yield, and price (independent variables) of traded partnerships. The best correlations between the 32 variables for each data set are shown in Tables 2, 3, and 4. The analysis identified the same variables as the most important factors for each period, but not consistently with the same relative importance.

Table 2: Best Correlations to DISCOUNT TO NAV

Independent Variable	**Best Correlations 1993/94 Data**	**Best Correlations 1992/93 Data**
Current Distribution/Book Value	0.845	.514
Current Distribution/Initial Units Size	0.851	.612
Current Distributions/NAV	0.727	.509
Three Year Average Net Income	0.689	n/a [12]
Current Distributions	0.674	.400

Table 3: Best Correlations to CURRENT YIELD

Independent Variable	Best Correlations 1993/94 Data	Best Correlations 1992/93 Data
Current Distribution/NAV	0.819	0.627
Current Distribution/Book Value	0.564	0.612
Current Distributions/Initial Unit Size	0.535	0.481
Operating Surplus/NAV	0.527	0.310
Current Distributions/Operating Surplus	0.366	0.712
Operating Surplus Revenue	0.516	0.145

Table 4: Best Correlations to TRADING PRICE

Independent Variable	Best Correlations 1993/94 Data	Best Correlations 1992/93 Data
Current Distribution	0.962	0.782
NAV	0.906	0.91
Three Year Average Distributions	0.881	n/a
Three Year Average Operating Surplus	0.873	n/a
Operating Surplus	0.832	0.89
Three Year Average Net Income	0.702	n/a
Book Value	0.750	0.764

We also tested the widely held notion that there should be a correlation between the size of the partnership and the yield, since a larger partnership with greater diversification of investments would hold less risk. In theory, all else being equal, a partnership with a larger universe of existing investors should improve the marketability of an individual interest, as well. In fact, there is very little correlation between either total units or total offering size and yield, or between total revenue, total NAV, or total operating surplus and yield or trading price (Table 5).

Table 5: Selected Correlations to OVERALL PARTNERSHIP SIZE and Yield, Price, Distributions/NAV, and Operating Surplus; 1993/94 Data Set

Independent Variable	Yield	Trading Price	Distribution /NA V	Operating Surplus
Offering size	0.013	-0.092	-0.101	-0.235
Total Units Issued	0.463	-0.341	0.309	-0.325

The data suggests that the overall size of the partnership is of no importance in determining the yield required by investors, and that financial performance is not related to size. Larger partnerships do not perform significantly better or worse than smaller ones, and are given no premium or discount in the market.

Multiple Regression

Having determined the most significant financial factors used in the market for pricing purposes, it is important to understand how the market uses these financial factors to make pricing decisions. For this interpretation the studies employed multiple regression, a version of linear regression that takes two or more variables into consideration at the same time. Since investors base their investment decisions on more than one variable, this approach is consistent with market decision making. To imitate this real world process, we used a technique called "Stepwise" multiple regression which automatically identifies the combination of variables that gives the best fit to the data. This approach yielded the results for the 1993/94 data set shown in Table 6. (13)

Table 6: Multiple Regression Formulas, 1993/94 Data Set (Multiple Regression Formula for Estimating TRADING PRICE: R2 = .956)

Constant	Multiplier	Independent Variable
12.752 +	0.119	x NAV
+	0.695	x Current Distributions
+	3.079	x Operating Surplus
+	0.012	x Initial Investment

Table 6a: Multiple Regression Formula for Estimating YIELD: R 2 = .813)

Constant	Multiplier	Independent Variable
0.4% +	42.0%	x Distributions/Book Value
+	-25.5%	x Distributions/Initial Investment
+	99.1%	x Distributions/NAV
+	6.3%	x Distributions/Operating Surplus

A statistic called "R squared" is a measure of how well the straight line fits the data. R2 will always be between 0 and 1. If there are many points far from the line, the R2 will be low; if all the data falls exactly along a straight line, R2 will be 1; a high R2 indicates a strong correlation between the variables. It is apparent that the multiple regression formula for predicting trading price is quite good, with an R2 of almost .96. The multiple regression formula for predicting yield still is not strong at approximately .81. This formula can be used to develop additional support for an estimate of yield, but should be used with caution. We developed a formula for directly estimating the discount to NAV. The R2 was .77. Therefore, one observation of these studies is that directly estimating the discount is less reliable than estimating the price or the yield.

The following graph shows actual trading prices versus the trading prices predicted by our regression formula. While the overall shape of the graph is quite good, there is considerable dispersion about the center line.

The discount to NAV varied, depending on the primary type of property held and trading period. Tables 7 and 8 present the results of the studies, by asset category, for 1992/93 and 1993/94 respectively. From Table 7, the apartment category had the highest median discount (69.1%), while the highest median discount from Table 8 is reflected in the commercial category (59.3%). The lease property category registered the lowest discounts in each data set: medians of 20.0% in 1992/93 (Table 7) and 12.1% in 1993/94 (Table 8). The maximum discount for all classes of real estate was over 45% for every category (except mini-warehouses in 1993/94, which was 34%) and a high of over 89% in 1992/93 and 85% in 1993/94.

Table 7: LP Pricing Discounts to NAV for the 1992/93 Data Set

Average and Range	Low	Low Quartile	Median	High Quartile	High
All Limited Partnerships	(4.8)	20.7	39.9	60.9	89.1
All Real Estate	(3.3)	31.6	47.5	66.2	89.1
Apartments	(2.7)	41.0	69.1	72.4	76.5
Commercial	4.0	43.9	61.3	68.3	83.4
Mini-warehouses	(2.4)	19.8	24.5	32.5	45.5
Mortgage Loan	(3.3)	32.2	57.0	62.0	88.6
Other Real Estate	10.4	39.4	45.6	63.9	89.1
Leased Property	(4.8)	11.3	20.0	32.8	55.8

Table 8: LP Pricing Discounts to NAV for the 1993/94 Data Set

Average and Range	Low	Low Quartile	Median	High Quartile	High
All Limited Partnerships	0.0	24.5	48.5	60.9	85.0
All Real Estate	3.1	35.1	54.0	65.2	85.0
Apartments	3.1	24.4	43.5	61.7	76.1
Commercial	23.3	45.8	59.3	70.9	85.0
Mini-warehouses	22.5	24.6	30.5	31.0	34.0
Mortgage Loan	16.9	48.8	59.1	65.4	83.9
Other Real Estate	13.8	32.7	46.0	57.0	70.8
Leased Property	0.0	7.2	12.1	16.9	49.4

General Findings from the 1992/93 and 1993/94 Data Sets

When combined with a fundamental financial analysis of the private or FLP that compares the subject to similar LPs priced by the market, the LP studies provide a meaningful valuation tool based on substantial empirical evidence of the factors deemed most important by investors who buy and sell LPs in arms' length transactions. Following are some of the observations based on our analysis. Although certain details differ between the two data sets, the broad findings regarding LPs traded in the secondary market are consistent for both periods of this study.

1. The size of the partnership is not important. Small partnerships are valued on the same basis as large ones.
2. Cash flow (in the form of operating surplus), NAV, initial dollar investment, and cash distributions are the most important factors in pricing LPs. The trading price of a limited partnership can be predicted with reasonably good accuracy by a formula that correctly uses these four financial measures.
3. The key determinants of the yield required by investors all involve the level of cash distributions, as related to operating surplus, NAV, initial dollar investment, and book value. However, the yield predicted by the multiple regression formula is not highly accurate.
4. Directly estimating the discount to NAV is less reliable than estimating price or yield. The regressions are not particularly accurate, although the same four financial variables re-emerge as being most important. Consequently, in applying the results to private and FLPs it is best to determine the trading price and/or yield, and then calculate the discount to NAV from the price.
5. The three year averages of distributions and operating surplus improved the estimates, and will be used more extensively in future updates of this study.
6. Net income is not a critical factor for predicting either trading price or yield.
7. The source of the NAV appraisal (general partner vs. independent) appears to be of little significance to investors.
8. Leverage considerations are not among the most key factors. Debt ratios have very low correlations with measures of value. This may be because debt levels were not significant for most of the partnerships in these studies.
9. There are major differences between the partnerships, depending upon their primary investments. Partnerships which are primarily invested in apartments, for example, are not treated the same by the market as those invested in commercial properties.
10. The age of the partnership shows very little correlation with yield, price, or other variables expressed in per unit terms.
11. The regression formulas varied considerably from year to year. Consequently, the formulas derived from the 1992/93 data set are less reliable when applied to the 1993/94 data set.

Further Studies of Private Partnerships in the Secondary Market

Separately, we have initiated a study of private partnerships that have traded in the secondary market. We have observed that discounts for private LPs are substantially larger than discounts required for the syndicated partnerships. Investors in private LPs demand current returns on their investments in the range of 20% for a typical non-syndicated partnership interest as compared to 10-14% for the syndicated LPs. This is because of:

1. The lack of competitive bidders for these partnerships resulting in an attendant greater illiquidity in comparison to the syndicated LPs,
2. Non-mandated distributions,
3. The lack of professional management,
4. A greater disregard for the limited partners by the general partners,
5. A limited partnership agreement which is often prejudiced in favor of the general partners, and

6. The assets in the partnership are typically either of one class or only one property, thereby depriving potential investors of any diversification or risk avoidance possibilities.

The results of this study of private partnerships will be available shortly.

Conclusion

The objective of this continuing study is to develop quantitative, real-world evidence upon which to base an opinion of fair market value of privately held limited partnerships, including Family Limited Partnerships. While folk methodologies invoking the "law of averages" have enjoyed wide circulation, it has become increasingly apparent that the trend in the courts is to require a more focused, specific analysis and that the reliance on broad, marginally relevant studies, will not shoulder the burden of proof in future litigation. The partnerships discussed in this article provide the appraiser with market pricing data involving the closest proxies available for non-traded partnerships, while establishing an empirical starting point for an informed, intelligent analysis as to how a specific privately held partnership would be valued during arms' length transactions in the open market.

The study shows with strong statistical support that investors base pricing decisions primarily on considerations involving cash distributions, operating surplus, initial investment, and net asset value. The study further suggests that the generally observed discount between a partnership's market price and its net asset value is a derivative measurement resulting indirectly from the pricing decision, and cannot be predicted directly with significant reliability from the financial parameters tested. Application of the data and the underlying market pricing relationships discussed in this article will contribute to more realistic and defensible valuations of privately held limited partnerships.

Notes

(1) Estimates vary; for example, $90 billion in "Flypaper Securities," by William P. Barrett [Forbes, June 22, 1992]; $100 billion in "Postponing Sale of Partnership Could Pay Off," by Jill Bettner [The Wall Street Journal, July 31, 1989]; $150 billion in "Protecting Limited Partners...," [The New York Times, June 2, 1991].
(2) The data on transactions used involves discounts from the NAV of the entity, and, in effect, are a combination of adjustments to the enterprise value of a partnership for lack of control and partial lack of marketability.
(3) Estate of Andrews - v. Commissioner, 79 T.C. 938 (1982)
(4) Petitioner's experts had botched the discount for a minority interest as well.
(5)The market for limited partnerships can be confusing at times. There are partnerships such as Alliance Capital Management Limited Partnership, which are traded on the New York Stock Exchange. (Our study does not concern the Alliance Capital Management type of partnership.) Secondly, there are the syndicated partnerships such as Balcor, Phoenix Leasing, etc., which are not traded on the NYSE, AMEX, or other exchange which you find in the business section of the newspaper. This is the type of partnership our studies researched and discusses.
(6) Partnership agreements can and do vary as to the duties and responsibilities of the general partners. Typically, limited partners have no ongoing management of the assets of the partnership but may have the right to vote on major decisions, such as the sale of a property, change in the general partner, etc. Most syndicated partnerships are governed by a partnership agreement that requires a simple majority to affect a change in the general partner.
(7)Which designates the "category" of the partnership.
(8) For example, many times an individual has either a non-economic belief that a particular partnership will "turn around" or that individual believes buying an interest at a discount to the net asset value represents a chance to make a "killing."
(9) There are two periods which typically result in sellers coming to the market. The first is around April 15th, when investors receive a bill from their accountant for tracking the K-1 (and also potentially an additional tax bill for "phantom income"). The second period occurs at the end of the year, when investors cull their portfolio.
(10) Partnership Profiles, Inc. / PO Box 7938 / Dallas, Texas 75209. Tel. (800) 634-4614.
(11) Typically, the NAVs are supplied for ERISA purposes and are sometimes used in filing Forms 5500 and 5498.
(12) Three year averages not obtained for 1992/93 data set.
(13) The comparable results for the 1992/93 data set are not shown or discussed in the same detail from this point to the end of the article because of space constraints.