

2021

DISCOUNT FOR LACK OF MARKETABILITY STUDY

Johnson/Park Empirical Method

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The 2021 Discount for Lack of Marketability Study provides the rate of return criteria that is needed for implementing the Johnson/Park Empirical Method for determining discounts for lack of marketability in the valuation of interests in privately held entities. The marketability discount quantifies the effect on value attributable to the inability to convert a privately held interest into liquid funds as quickly as a publicly traded security. Revenue Ruling 77-287 recognizes the lack of marketability for an interest in a privately held business as follows:

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.¹

Practitioners sometimes make the error of applying a fixed discount for lack of marketability based on averages from studies without any regard to the effect on the rate of return. This practice is inconsistent with the fundamental concept of valuation, which equates risk and reward.

A privately held interest is not publicly registered, and a public or secondary market does not exist for a privately held interest. The inability to readily sell an interest in a privately held entity increases the owner's exposure to changing market conditions and increases the risk of ownership. Because of the lack of marketability and the resulting increased risk associated with ownership of a privately held interest, an investor typically demands a higher return or yield in comparison to a similar but publicly traded interest. Consequently, the privately held interest trades at a discount or a value less than it would if it were publicly traded. The size of the discount associated with a lack of marketability is generally correlated to the risk an investor would inherit in light of the inability to liquidate the interest.

It is well recognized that as risk increases, the required return increases. Because of the increased risk of an investment in a privately held entity in comparison to publicly traded entities due to the lack of marketability, a hypothetical investor would require an increased return. Investors purchasing nonmarketable investments face the following question:

¹ Revenue Ruling 77-287.

How much more of a return is required over marketable investments to compensate for the lack of marketability of the privately held investment?

In valuing a nonmarketable interest in a privately held entity, compensating the investor for increased risk can be accomplished by applying a discount for lack of marketability. The application of the discount for lack of marketability increases the effective return on investment to compensate the owner of the interest for the risks associated with the ownership of a nonmarketable interest.

Three studies were examined to determine the size of the discount that measures the increase in return required to compensate investors that hold illiquid versus liquid securities or investments with longer-term risk horizons.

I. PRIVATE EQUITY VS. PUBLIC EQUITY RETURNS

The first study examined the increase in return required by investors in private equities versus public equities. To measure the difference, the historical 39-year arithmetic return between private equity investments and publicly traded equity investments were analyzed. The 39-year term is based on the longest period that private equity investment returns have been published.

For the publicly traded equity investments, the historical returns were measured using the information published by Duff & Phelps in the 2021 SBBI Yearbook.² For privately held equity investments, the historical returns were measured using the Cambridge Associates LLC U.S. Venture Capital Index®.³ This index tracks the historical performance of over 8,000 funds that invest primarily in small, minority interests in privately held entities. The rate of return information obtained from Cambridge Associates LLC going back to 1982 reflects an average annual return over the past 39 years of 19.2%. As reflected below, the long-term return for private equity interests was 19.2% vs. 13.3% for publicly traded small stocks. Comparing the returns resulted in an increased return of 5.8%, which equated to a 43.6% increase in return, as shown below.

² Duff & Phelps, LLC, 2021 SBBI Yearbook, (New York, NY: Duff & Phelps, A Kroll Business, 2021), A-4.

³ Cambridge Associates LLC, U.S. Venture Capital Index® and Selected Benchmark Statistics, (Boston, MA: Cambridge Associates, Inc., 12/31/2020), 8.

	39 Year Average
LT Return - Privately Held Companies	19.2%
LT Return - Publicly Traded Small Stocks	<u>13.3%</u>
Difference	5.8%
Incremental Return as a Percent	43.6%

For this study, it is recognized that the long-term returns for privately held companies are derived from venture capital investments, which may reflect other investment risks in addition to horizon risk. However, this is the closest measure available that provides a comparable rate of return information that indicates the increased risk demanded by investors for longer holding periods.

II. RESTRICTED STOCK RETURNS

The second study examined the increase in return demanded by investors of restricted stocks as compared to the same shares of stock traded on an active exchange. The restricted stock of a public company is identical to its counterpart that is traded on a major exchange, except that restricted stock cannot be openly traded for a designated period of time. Restricted stock is usually issued by a company to raise capital while avoiding the costs of registering with the Securities and Exchange Commission.

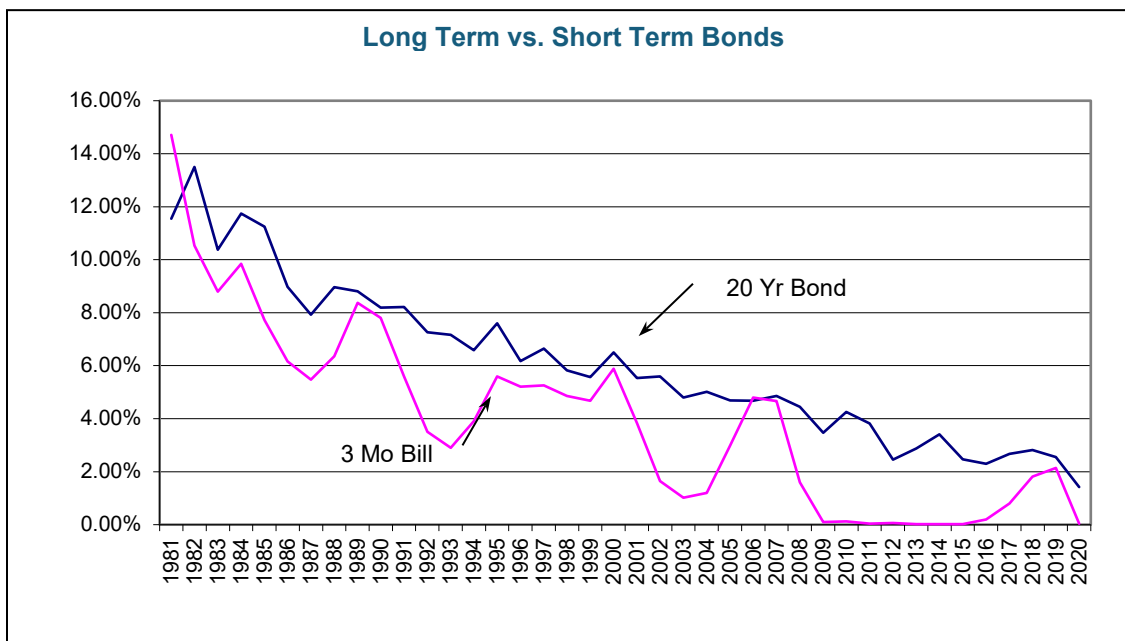
Prior to 1990, the stock of small companies could be sold by a public company without making a public offering. The securities sold in this type of transaction were subject to certain restrictions, which stated that the stock could not be resold without being registered with the SEC or qualifying for a Rule 144 exemption. Originally, Rule 144 allowed the limited resale of unregistered securities after a holding period of two years. In 1990, the SEC implemented new regulations that allowed qualified institutional investors to trade restricted stock among themselves without filing registration documents. This new rule, called Rule 144A, effectively created a limited market for the purchase and sale of these restricted stocks and increased liquidity for restricted stocks. In 1997, the SEC reduced the Rule 144 holding period from two years to one year. This change further increased the liquidity of restricted stocks.

In order to measure the increase in return that investors required between publicly traded shares of stock and restricted shares of stock in the same company, the return for the restricted stock and publicly traded stock were measured by earnings per share as a percent of the market price. Based on 25 transactions using the underlying data from the Johnson Restricted Stock Study that was published in the

March 1999 issue of Shannon Pratt's Business Valuation Update, the average increase between the return using the restricted stock price and the return using the publicly traded price was 29.5%.⁴

III. LONG TERM VS. SHORT TERM BOND HORIZONS

The third study examined horizon risk between short-term and long-term government bonds. Horizon risk was used as a proxy to measure the increased return that investors demand to compensate for the increased risk during the holding period of long-term bonds as compared to short-term bonds. For example, while long-term bonds can be sold quickly, an investor must hold the bond to maturity to be guaranteed the return of the original investment in the event interest rates rise. Therefore, investors require a higher rate of return to compensate for the uncertainty of the more extended holding period.⁵ With the exception of a few years, bond investors required an increased return over the past forty years, as reflected in the following chart.



The average variance in income return between short-term Treasury Bills and long-term Treasury Bonds over forty years is shown below:

⁴ Spencer Jefferies, et. al., Comprehensive Guide for the Valuation of Family Limited Partnerships, 5th ed., (Dallas, TX: Partnership Profiles, Inc., 2017), 133-135.

⁵ Ibid, 136.

	40 Year Average
20-Year Treasury Bond	6.1%
3-Month Treasury Bill	<u>4.0%</u>
	2.1%
Incremental Increase	51.6%

This differential represents an incremental increase in yield between short-term and long-term investments in risk-free securities. In other words, investors have demanded a higher rate of return (in this case, a 51.6% higher return) for the additional risk of the extended holding period.

Comparatively, an interest in a privately held security that cannot be sold in a secondary market is a riskier investment that may also need to be held for an extended period of time due to the lack of a ready market.

IV. SUMMARY

The results of the 2021 Discount for Lack of Marketability Study demonstrate that, in general, an increase in the required rate of return ranges from approximately 30% to 50% to adequately compensate investors for the risk of illiquid investments:

Studies	Average Incr Return
Private Equity vs. Public Equity Returns	43.6%
Restricted Stock Transactions	29.5%
LT vs. ST Bond Horizon Risk	51.6%

Comparing these findings with the research that has been conducted since 2006 indicates a similar range of results for the average increase in the required rate of return.^{6,7,8}

⁶ Spencer Jefferies, et. al., Comprehensive Guide for the Valuation of Family Limited Partnerships, 3rd ed., (Dallas, TX: Partnership Profiles, Inc., 2006), 133.

⁷ 2014 Discount for Lack of Marketability Study – Partnership Profiles Report #9, (Dallas, TX: Partnership Profiles, Inc., 2014), 5.

⁸ Spencer Jefferies, et. al., Comprehensive Guide for the Valuation of Family Limited Partnerships, 5th ed., (Dallas, TX: Partnership Profiles, Inc., 2017), 137.

Studies	Increase in Rate of Return					AVG
	2017	2018	2019	2020	2021	
Private Equity vs. Public Equity Returns	37.3%	36.4%	37.6%	35.7%	43.6%	38.1%
Restricted Stock Transactions	29.5%	29.5%	29.5%	29.5%	29.5%	29.5%
LT vs. ST Bond Horizon Risk	42.6%	43.5%	42.2%	46.5%	51.6%	45.3%

Based on these three studies, it is apparent that investors demanded an approximately 30% to 45% higher rate of return for the additional risk of holding a nonmarketable investment or being exposed to increased risk over the holding period.

By applying a discount for lack of marketability to a noncontrolling, marketable value, the average return on a privately held interest can effectively be increased to a reasonable level to compensate an investor for the lack of marketability and the additional risks associated with the ownership of the privately held interest.

V. APPLICATION

The following example demonstrates an application of the discount for lack of marketability to effectively increase the required rate of return. In this example, assume the subject interest was an interest in a limited partnership that owned an established apartment complex. The value of a 1% limited partnership interest was \$80,000 on a noncontrolling, marketable basis, and the cash flow to the 1% interest was \$12,000 per year. Dividing the annual cash flow by the noncontrolling, marketable value resulted in a rate of return (as measured by yield) of 15%.

Annual Cash Flow Forecast	\$ 12,000
Divided by Noncontrolling, Marketable Value	80,000
Yield on a Noncontrolling, Marketable Basis	15.0%

Next, the previously discussed research was examined, which indicates that an increase in the rate of return of 30% to 45% would be reasonable to compensate for the additional risks due to the lack of marketability. Applying a discount for lack of marketability of 25% increases the rate of return and lowers the value to \$60,000 for a 1% noncontrolling, nonmarketable interest.

Value of a 1% Noncontrolling, Marketable Interest	\$ 80,000
Discount for Lack of Marketability	25% (20,000)
Value of a 1% Noncontrolling, Nonmarketable Interest	\$ 60,000

The calculation of the rate of return after the application of the discount for lack of marketability resulted in a rate of return (yield), as shown below.

Annual Cash Flow Forecast	\$ 12,000
Divided by Noncontrolling, Nonmarketable Value	60,000
Yield on a Noncontrolling, Marketable Basis	20.0%

In this example, discounting the noncontrolling, marketable value by 20.0% effectively increased the projected annual return of a noncontrolling interest by 33.3%, from a rate of 15.0% to a rate of 20.0%.

	<u>Rate of Return</u>
Before Discount for Lack of Marketability	15.0%
After Discount for Lack of Marketability	<u>20.0%</u>
	5.0%

Incremental Increase	33.3%
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Determining the size of the discount for lack of marketability should give consideration to the effect that it has on the rate of return. Using this methodology enables the practitioner to select a discount percentage that takes into account the facts and circumstances of each valuation to compensate an investor for the increased risk related to the lack of marketability.

VI. CONCLUSION

To determine an appropriate discount for lack of marketability, the appraiser must assess the risks of the subject interest to determine the increased return an investor would require to compensate for the lack of marketability as compared to a similar investment in a publicly traded interest. The following are some of the factors to be considered when assessing the risk of a privately held interest.

Factors that would cause an interest to trade at a premium or a low marketability discount would include the following:

- minimal volatility in the value of the underlying assets,
- above average expectations for future yield,
- a proven and stabilized history of income,
- the certainty of distributions or expectation of capital appreciation,
- the limited time period on restriction of ability to sell the interest, and
- favorable outlook for the future growth of the entity.

Factors that would cause an interest to trade at a discount towards the higher end of the range would include the following:

- volatility in terms of the value of the underlying interests,
- questionable ability to generate a return on investment,
- small size in relation to other investments,
- unable to generate a satisfactory level of income for distribution of earnings or to support future growth in operations, and
- investments in industries that were viewed unfavorably by the investing public.

Unlike restricted securities that have a limited period before which they can be traded publicly, a privately held interest is not publicly registered and will likely never have access to a public market. It would be less marketable than an interest in a comparable publicly traded entity due to the lack of a public market in which to trade the interest. Therefore, a hypothetical investor would not be willing to pay an equivalent price but rather would purchase the privately held interest for something less than a comparable alternative investment that was traded in the secondary market.

When determining the appropriate amount by which the interest should be discounted for lack of marketability, the effective increase in return should be sufficient to compensate an investor for illiquidity and the additional risks associated with ownership of a privately held interest. As demonstrated previously, a percentage increase in the rate of return of 30% to 45% appears reasonable based upon comparisons of privately held to publicly held equity investments, restricted stocks, and the horizon risk of bonds. However, this increase may be higher or lower, depending on the facts and circumstances of each valuation.

Ultimately, a practitioner should always consider the risk/reward relationship that actual investors in arm's length transactions rely upon to measure the value of any investment given the specific facts and circumstances of the investment.