FMV's Two-Year Equivalent Discounts for Lack of Marketability Methodology and Calculator

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bvresources.com
+1-503- 291-7963
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TIMELY NEWS, ANALYSIS, AND RESOURCES FOR DEFENSIBLE VALUATIONS

FMV's Two-Year Equivalent Discounts for Lack of Marketability Methodology and Calculator

By Lance S. Hall, ASA, and David Bertucci

FMV's two-year equivalent Discount for Lack of Marketability Calculator is a significant tool that has been modified to render current restricted stock data meaningfully comparable to private companies.

Background. To fully understand the importance of the Calculator, you must first understand the history of restricted stock. The term "restricted stock" refers to: (1) unregistered shares issued by public companies in private placement transactions; and (2) registered and unregistered securities held by affiliates of issuers. Restricted stock may not be sold through public transactions, due to securities laws and regulations.

After the stock market crash of 1929, the federal government sought ways to prevent manipulation of stock prices through the purchasing and "dumping" of large blocks of stock by short-term speculators. Through passage of the Securities Act of 1933, the government requires registration of nearly all securities prior to their sale in public transactions, unless an exemption from registration under the act can be found. Private placements are exempt under Section 4(2), and the exemption most commonly used for resale of unregistered stock in the public markets is Section 4(1)—transactions not involving issuers, underwriters, or dealers. Section 2(a)(11) defines an underwriter as anyone who participates in a distribution or who "has purchased from an issuer with a view to … distribution." To qualify for this exemption, anyone who purchases unregistered securities from an issuer in a private placement, for example, and then wishes to sell the stock to the public, must show that he or she is not an underwriter.

Prior to the adoption of Rule 144, the resale of unregistered shares was subject to an unpredictable set of rules. Both the SEC and the courts were required to delve into the subjective intent of the purchaser to reach a conclusion regarding whether a seller of unregistered shares qualified for exemption under Section 4(1). Gradually, this subjective test evolved in the courts into a complicated set of rules, focusing on how long the purchaser had held the securities and whether the purchaser had undergone a change of circumstances that might force a sale.

In January 1972, under the Securities Act of 1933, the SEC adopted Rule 144, an objective safe harbor for the resale of restricted securities. Rule 144 made the resale of restricted stock significantly more predictable as it requires an initial holding period of some length of time to prevent the purchase of unregistered securities with a view toward resale in public markets. Initially, all unregistered securities had to be held for at least two years, measured from the time the securities were purchased from the issuer or an affiliate, before any public resale. After the initial holding period, unregistered securities could be sold in public transactions by complying with certain "dribble-out," or volume limit, provisions. In 1997, the required holding period for restricted stock under Rule 144 was decreased from two years to one year, and in 2008 the holding period was further reduced to six months.

Despite the gradual relaxation of the Rule 144 resale limitations, investors have increasingly

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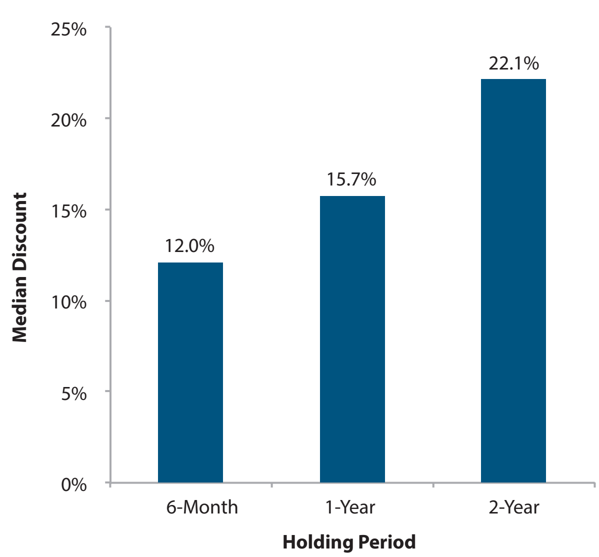
tried to seek greater liquidity in private placements. As a result, the number of issuers of restricted stock entering into registration rights agreements has increased. Registration rights typically obligate the selling company to register the shares for resale within four to six weeks. Once registered, the shares are essentially as liquid as any other publicly traded share of the company.

The FMV Restricted Stock Study. Since its founding in 1991, FMV has been compiling a database of private placements of unregistered common stock issued by public companies. The FMV Restricted Stock Study was first introduced to the professional valuation community in 2001 to aid valuators in determining defendable discounts for lack of marketability, and it was designed to meet the needs of anyone charged with determining DLOMs. The FMV Study is a database currently containing more than 750 transactions that occurred between 1980 and 2013.

Within the FMV Study, we observed that the impact of holding periods (a measure of liquidity) on discounts was material. As seen in Exhibit 1, the overall median discounts for the two-year, one-year, and six-month holding period transactions are 22.1%, 15.7%, and 12.0%, respectively.

Exhibit 1. Dispersion of Data by Rule 144 Initial Holding Period



In addition, as shown in Exhibit 2, the median discount for the transactions with registration rights, which have greater liquidity, is 13.4%, compared to 18.6% for the transactions without registration rights. Investors often look for issuers in private placements to provide for possible liquidity prior to the end of the required holding period by entering into registration rights agreements. Registration rights require the issuer to register the shares or a portion of the shares. These agreements typically occur in one of three forms: demand registration rights, which require registration upon the purchaser's request; mandatory registration rights, which require registration within a specific time frame; and piggyback registration rights, which allow registration when the issuer or another investor initiates a registration of shares.

Exhibit 2. Dispersion of Data by Registration Rights

The 'holding period' problem. In terms of liquidity, two-year holding period transactions are the most similar to private company equity and, thus, are most meaningful for comparison in determining DLOMs. However, valuation professionals also favor using the most current information possible. Due to the fact that all new transaction data for restricted stock transactions are either for six-month holding periods or six-month holding periods with registration rights, the number of transactions in the FMV Study with shorter initial holding periods and registration rights has been gradually increasing with each quarterly update. While the new transaction discounts reflect the increased liquidity of shorter holding periods, there has been no corresponding increase in the liquidity of private equity. As a result, as new data are analyzed, valuation professionals have been struggling with the fact that shorter holding periods and registration rights transactions have reduced the meaningful comparability of current restricted stock transactions with private company equity.

Exhibit 3. Market Volatility Adjustments

VIX Percentile Group	VIX Range Low	VIX Range High	Median Multiplicative Adjustment Factor[1]
0-60th	11.2	23.1	1.00
60th-80th	23.1	25.2	1.16
80th-100th	25.2	32.9	1.23
Implied	32.9	40.0	1.39
Implied	40.0	50.0	1.57
Implied	50.0	60.0	1.78

(1) Multiplicative difference between the RSED for each transaction and the actual discount for such transaction.

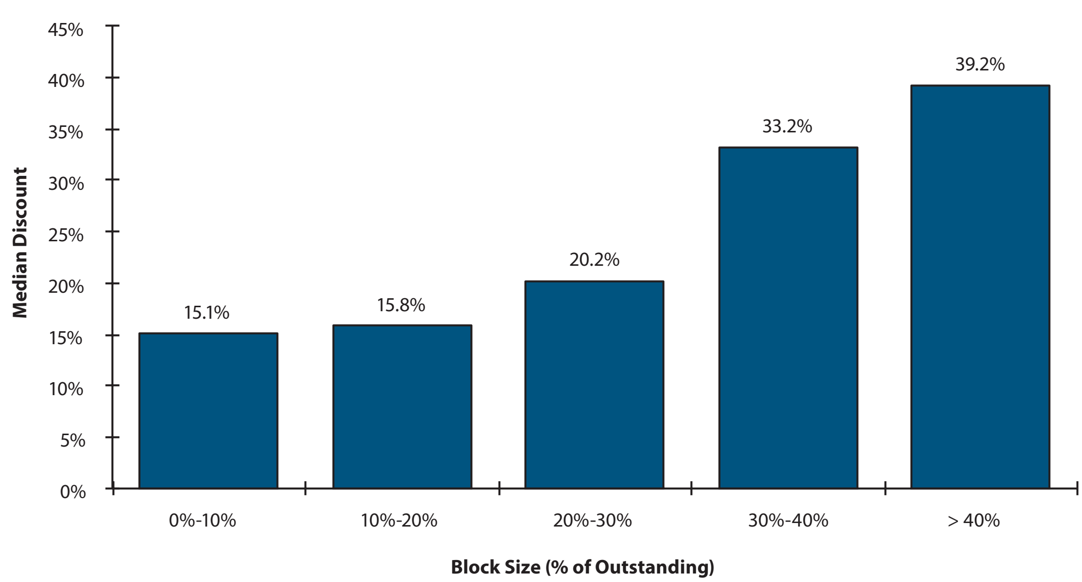
Problem resolved. Through years of research and complex analysis, FMV has resolved the issue valuation professionals have been battling. When FMV originally conceived a "two-year equivalent" solution, the task appeared to be relatively simple; however, it quickly became obvious that this was not the case. Initial attempts to determine the appropriate methodology led to illogical conclusions. It became apparent that factors outside of holding periods were affecting the analysis. To overcome the impact of these factors, FMV set out to isolate the impact of holding periods on discounts. To accomplish this, FMV needed to analyze a set of data with the most similar characteristics occurring in typical conditions.

Through an iterative process that involved significant further analysis, FMV has successfully identified several factors other than holding periods that impact the discounts. One of the primary factors impacting the discounts was market volatility. FMV has historically observed that transactions occurring during high VIX periods have higher-than-normal discounts, all else being equal. To account for the impact of higher-than-normal VIX levels, FMV recommends a market volatility adjustment (as shown in Exhibit 3) when using the Calculator. To mitigate the impact of high VIX periods on the discounts in the two-year equivalent analysis, FMV excluded all transactions in the top VIX quintile from the data set. The impact of the recession on companies in the finance, insurance, and real estate industry—collectively, Standard Industry Classification (SIC) code 6XXX—was particularly significant. The companies in these industries exhibited characteristics inconsistent with historical trends that impacted their discounts; therefore, all SIC code 6XXX companies were excluded from the adjusted data set.

As a result of the dribble-out provision of Rule 144, transactions including larger percentage blocks have longer effective holding periods. Consequently, as observed in the FMV Study and shown in Exhibit 4, larger blocks lead to increased discounts resulting from a greater degree of illiquidity. Specifically, the impact on the discount from increased illiquidity is significant for blocks larger than 20.0%. FMV determined that it was appropriate to exclude all transactions of percentage blocks larger than 20.0% from the adjusted data set because these transactions are most impacted by block size. Finally, all transactions with premiums (negative discounts) were also excluded from the adjusted data set. Logically, a knowledgeable investor would rather acquire shares in the public marketplace without paying a premium. While FMV does not have access to underlying purchase contracts, we believe that many of these premiums are likely the result of an investment opportunity not available to other investors or an unidentifiable relationship with the seller. For purposes of the FMV analysis, we applied the aforementioned exclusions and derived a data set of the most similar transactions occurring under typical conditions.

Through analysis of this adjusted data set, FMV has developed appropriate and reasonable adjustments applicable to one-year holding period, six-month holding period, and registration rights transactions. The appropriate adjustment for one-year holding period transactions was calculated by comparing the median two-year holding period transactions to the median one-year holding period transactions, both without registration rights. The adjustment factor for one-year holding period transactions, without registration rights, is 3.8%. This same methodology was utilized to determine the appropriate adjustment for six-month holding period

Exhibit 4. Block Size and Discounts



Reprinted with permissions from Business Valuation Resources, LLC transactions. The adjustment for six-month holding period transactions was calculated by comparing the median two-year holding period transactions to the median six-month holding period transactions, both without registration rights. The adjustment factor for the six-month holding period transactions without registration rights is 5.7%. Finally, the appropriate adjustment for transactions having registration rights, which typically equates to a four- to six-week holding period, was calculated by comparing the median two-year holding period transactions without registration rights to the median for all six-month transactions with registration rights. This adjustment factor for six-month transactions having registration rights is 6.6%.

A summary of the appropriate two-year equivalent adjustments is shown in Exhibit 5. Through the addition of the appropriate two-year equivalent discount adjustment to the unadjusted transaction discount, FMV is able to derive two-year equivalent discounts that reflect the expected discount under the original Rule 144 holding period of two years and make the data more comparable to private companies. As a result of the aforementioned adjustments, each additional data point (currently six-month or six-month with registration rights) is as meaningful in the determination of the appropriate discount for lack of marketability as the two-year holding period data.

The two-year equivalent methodology described above has allowed FMV to implement additional functionality into the Calculator. Users have the option to choose the traditional unadjusted transactions discounts or select "two-year holding period equivalent discounts." The two-year equivalent adjustment can be used when determining a DLOM for private company equity. However, for a security with a materially greater or lesser degree of liquidity than the two-year equivalent restricted stock data, appraisers will still need to make subjective adjustments to the discount indications.

Exhibit 5. Two-Year Equivalent Discount Adjustments	
Registration Rights Transactions	6.6%
Six-Month Transactions	5.7%
One-Year Transactions	3.8%

Case study. In this section, we provide instructions for using the Calculator to derive DLOMs for minority interests in private companies through a case study. The case study demonstrates how the Calculator with the two-year equivalent adjustment may be used to determine a discount for a hypothetical private company interest. A more detailed discussion is available in the *Companion Guide to The FMV Restricted Stock Study,* available through BVR's website (www.bvmarketdata.com/pdf/CompanionGuide.pdf).

ABC Corp. is a wholesale distributor of various widgets, distributing its products primarily through retail outlets in the United States. The company has a long history of stable operation and financial performance and has an experienced management team in place. ABC is a closely held corporation with a single class of voting common stock. There are no buy-sell agreements, put or redemption rights, or other contractual provisions that would impact the "market" for the company's stock or provide an indication of the value of minority interests in ABC. Management has not solicited, nor have they received, any offers to acquire the company from competitors or financial buyers, and there is no intention at this time of taking the company public.

For estate planning purposes, the appraiser is charged with determining the fair market value of a 15% interest (Subject Interest) in the common stock of ABC as of June 30, 2014 (Valuation Date). The marketable minority interest (publicly traded equivalent) value for 100% of the company's equity has been determined to be $35 million. Exhibit 6 summarizes certain key financial

Exhibit 6. Key Financial Metrics ($000s)	
Market Value of Equity	$35,000
LTM Revenues	100,000
Total Assets	45,000
Book Value of Shareholders' Equity	17,500
LTM Net Income	7,500
Volatility	NA
LTM = Latest 12 Months	

Exhibit 7. Financial Characteristics Comparison

	Subject Company Value ($000s)	FMV Study™ Quintile	Discount Indication	Selected Weight	FMV Suggested Weight
Size Characteristics					
Market Value of Equity (000s)	$35,000	5th Quintile	27.0%	2	2
Revenues (000s)	$100,000	2nd Quintile	16.4%	1	1
Total Assets (000s)	$45,000	3rd Quintile	19.6%	3	3
Balance Sheet Risk Characteristics					
Shareholders' Equity (000s)	$17,500	3rd Quintile	20.7%	2	2
Market-To-Book Ratio	2.0	2nd Quintile	16.3%	1	1
Profitability Characteristics					
Net Profit Margin	7.5%	1st Quintile	15.5%	1	1
Market Risk Characteristics					
Volatility	NA	NA	NA	0	0
Indicated Restricted Stock Equivalent Discount			**20.2%**		

metrics relevant to the determination of the DLOM applicable to minority interests in the company's shares. As shown, we typically do not provide a volatility estimate for private companies. In addition, we note that dividends have not been paid historically in favor of retaining income for expansion, and the majority owners intend to pursue a similar strategy in the foreseeable future.

To make the characteristics of the transactions in the FMV database most comparable to ABC, we will utilize inflation adjusted data and trim the transaction dates to exclude all data after the Valuation Date. In this case, there were no transactions in the database from after the Valuation Date. All else being equal, two-year holding period transactions are the most similar to private company equity and, thus, most appropriate for comparison in determining discounts for lack of marketability for ABC. Consequently, we utilized two-year equivalent discounts. As the transactions discounts have been adjusted to two-year equivalent, we will not exclude any transactions based on the presence of registration rights or the length of the initial holding period. However, there are few true premiums in the market for restricted stock, and it is believed that these premiums may be the result of an investment opportunity not available to other investors or an unidentifiable relationship with the seller. As a result, all with premiums (negative discounts) were also excluded.

Exhibit 8. Best Comparables Analysis Weights

	Weights Selected for Financial Characteristics Comparison Analysis	Variables Selected For Best Comparables Analysis	FMV Suggested Variables
Market Value	2	Yes	Yes
Revenues	1	Yes	Yes
Total Assets	3	Yes	Yes
Shareholders' Equity	2	Yes	Yes
Market-To-Book Ratio	1	Yes	Yes
Net Profit Margin	1	Yes	Yes
Volatility	0	No	No
Number of Variables to Match:		6	

Once we have established the public equity equivalent value, the question we ask ourselves is: If our subject (private) company were a public company issuing restricted stock, at what price would that restricted stock be issued? The difference between this level and the public equity equivalent value equals the restricted stock equivalent discount (RSED).

From the Calculator, our first estimate of the appropriate RSED for the company, based on a weighted average of discount indications for various financial characteristics of the companies

Exhibit 9. Best Comparables Analysis						
Number of Matches	1	2	3	4	5	6
Transaction Count	470	237	77	19	2	0
Median Discount	18.4%	19.3%	20.1%	18.3%	17.5%	NA
Indicated Restricted Stock Equivalent Discount Range						**18% - 20%**

in the FMV Study, is 20.2% (See the Financial Characteristics Comparison in Exhibit 7). In this example, we have selected the weights suggested by FMV, although users have the ability to select whatever weights they prefer. Note that, should a user have estimated a reliable volatility, FMV recommends giving this a weight of 3 (i.e., the highest recommended weight of any single variable).

We also constructed a number of samples of the FMV Study issuers that were comparable to the company across multiple variables. For this purposes, a "match" on a given variable indicates that the FMV Study issuer fell into the same quintile as ABC for that variable. As shown in Exhibit 8, for this example, we elect to include all variables other than volatility, as we have not estimated volatility for ABC. If a reliable volatility estimate is available, FMV recommends including volatility in this analysis. Generally, FMV recommends selecting all variables for which the subject company has an available and meaningful statistic. As shown in the "Best Comparables Analysis" in Exhibit 9, there are no transactions in the FMV Study with six quintile matches, and the sample with five quintile matches is too small to provide a reliable discount indication. However, the sample with four quintile matches appears to have a sufficient transaction count and provides a discount indication below the 20.2% derived from the financial characteristics comparison analysis. This is not unusual and may be considered in selecting the RSED. It is our opinion that the appropriate RSED range for the company is 18% to 20%, based on the best comparables analysis. Based on the foregoing, as shown on Exhibit 10, we select an RSED of 20.0%, in this case.

After determining the RSED, which is based on various firm-specific risk factors, we must consider broader market risks prevailing as of the Valuation Date. During periods of abnormally high market volatility, it is generally appropriate to apply the market volatility adjustment to the RSED. As of the Valuation Date, the VIX closed at a value of 11.57. The trailing average VIX closing value for the one-month and six-month periods (prior to the Valuation Date) were 11.54 and 13.76, respectively, and similar to typical VIX levels. Accordingly, we have determined a market volatility adjustment factor of 1.0, which, when applied to the RSED, results in an adjusted RSED (ARSED) of 20.0%.

Exhibit 10. Best Comparables Analysis	
Restricted Stock Equivalent Discount	
Financial Characteristics Comparison	20.2%
Best Comparables Analysis	18% - 20%
Selected Restricted Stock Equivalent Discount	**20.0%**

The private equity discount (PED) increment must be added to the ARSED to compensate for the fact that ABC is not a public company issuing a small block of restricted stock that will ultimately have access to a public trading market. Instead, the company is a privately held firm, subject to significantly more illiquidity than the average company in the FMV Study, even when based on the two-year equivalent holding periods. The greater levels of illiquidity associated with interests in privately held entities, such as ABC, are generally more similar to those associated with the largest blocks of restricted stock in public companies. Accordingly, the adjustment factor that takes the subject company value from the restricted stock equivalent level of value to the private equity (nonmarketable minority) level of value is based on an analysis of the largest (most illiquid) blocks of restricted stock in the FMV Study. This analysis involves comparing the actual observed discount indications for large-block transactions (i.e., those that most resemble private equity) with the indicated RSED derived from the Calculator. As we have utilized a two-year equivalent adjustment, the Calculator will automatically apply the appropriate PED adjustments that were determined using the Calculator with two-year holding period equivalent discounts.

Exhibit 11. Best Comparables Analysis			
Selected Restricted Stock Equivalent Discount			**20.0%**
	Low	**High**	**Multiplicative Adjustment Factor**
VIX Range:	0.00	23.10	1.00
	23.10	25.20	1.16
	25.20	32.90	1.23
*Implied	32.90	40.00	1.39
	40.00	50.00	1.57
	50.00	60.00	1.78
		VIX Value	**Indicated Mult. Adj. Factor**
Valuation Date		11.57	1.00
Trailing 1-Month Average		11.54	1.00
Trailing 6-Month Average		13.76	1.00
Selected Market Volatility Adjustment Factor			**1.00**
Adjusted Restricted Stock Equivalent Discount			**20.0%**

Based on the 20.0% ARSED, as previously determined, and the indicated adjustment factors, as shown in Exhibit 12, the adjusted discount is indicated in a range of 33.6% to 40.0%. Given that there are no unusual circumstances surrounding an investment in the Subject Interest, such as contractual restrictions on resale, right of first refusal, a high distribution payout ratio, or an anticipated near-term liquidity event, in this case, we select a PED of 37.0%, or roughly between the indicated range. Based on these considerations, it is our opinion that the marketability discount applicable to interests in ABC Corp. equity is 37.0%. This, when applied to the company's public equity equivalent value, yields the private equity value for the company, which is the appropriate level of value for the subject nonmarketable minority interest in the company's equity.

Summary and conclusion. With two-year equivalent discounts, FMV has finally made current restricted stock data (six-month holding period and six-month holding period with registration rights) meaningful in the determination of the appropriate discounts for lack of marketability for private companies.

FMV has developed a solution to the holding period issue by successfully analyzing transactions with generally similar characteristics occurring in typical conditions and isolating the incremental discount adjustments—thus, developing the two-year equivalent discount. Valuation professionals are able to derive meaningful

Exhibit 12. Private Equity Discount Analysis			
Adjusted Restricted Stock Equivalent Discount		**20.0%**	
		Median Adjustment Factors	
	% Shares Placed	30% - 40%	40% - 50%
	Multiplicative	1.71	1.78
	Inverse Multiplicative	0.83	0.75
Private Equity Discount Range		Low	High
Multiplicative		34.2%	35.6%
Inverse Multiplicative		33.6%	40.0%
Discount for Lack of Marketability Range			
Narrow Range		34.2%	35.6%
Wide Range		33.6%	40.0%
Selected Discount for Lack of Marketability			**37.0%**

discounts for lack of marketability utilizing up-to-date and relevant information and maintaining comparability to private companies.

The FMV Restricted Stock Study and FMV DLOM Calculator are available exclusively through Business Valuation Resources at www.bvmarketdata.com/.

Lance Hall *is a managing director of FMV Opinions Inc., a national valuation and investment banking firm with offices in New York City; San Francisco; Irvine, Texas; and Dallas. He may be reached at* lhall@fmv.com*.* ***David Bertucci*** *is the head of research at FMV Opinions Inc. He may be reached at* dbertucci@fmv.com*.*