Pluris
DLOM Database

ValuSource

4575 Galley Road, Suite 200E
Colorado Springs, CO 80915
800.824.8763
sales@valusource.com
www.valusource.com

Table of Contents

Table of Contents

Disclaimers

The theories and analysis that underlie use of the Pluris DLOM Database are included in this User Guide, as is one approach to calculating a Discount for Lack of Marketability using data obtained from the database. The discussion included in this guide depicts one possible method for deriving a DLOM for minority interests in private companies, and may not be applicable in all cases.

The application of the proposed methodology described in the Case Study is provided for illustrative purposes only and may not be relied upon to reflect accurately the DLOM for any other scenario. The valuator is free to select and analyze data from the Pluris DLOM Database and create a restricted stock study for a valuation, using his/her own observations, conclusions and calculations. ValuSource does not assume any responsibility for the use or interpretation of the data, and/or methodology described herein.

Pluris Valuation Advisors LLC may apply many different methods for determining the DLOM for any particular valuation matter, including both empirical data-based models (such as the methodology outlined in this guide) and theoretical models. The right combination and weighting of models and methods differs from case to case and depends on individual circumstances of the companies, assets, or securities that are the subject of each valuation matter.

Restricted stock private placement data is just one of many different forms of empirical evidence that might support and help determine the proper DLOM for any particular case. Further, many different datasets of restricted stock transactions exist and may be considered for any particular valuation matter.

Pluris Valuation Advisors LLC often considers additional data and methods (including the LiquiStat data) in determining the DLOM, in addition to the data discussed in this guide and, in most cases, we strongly recommend using more than one method for determining the DLOM. The data and methodology outlined in this document is provided by ValuSource and the associated services (including web interface) is the product of ValuSource. Pluris Valuation Advisors LLC takes no responsibility for the service whatsoever.

About the Pluris DLOM Database™

Data Source & Selection Criteria

The data that makes up the Pluris DLOM Database is obtained from PrivateRaise[1], a leading research and data provision firm dealing with private investments in public equity (PIPEs) and Rule 144A transactions, as well as venture capital financings, shelf registration statements, reverse mergers and special purpose acquisition companies (SPACs). PrivateRaise is owned by The Street[2] and serves banks, investment managers, financial firms and others around the world.

Like much data available to valuators for use in business valuations, the accuracy of the transaction data in the Database cannot be guaranteed. The data is collected from reports prepared by third parties, processed by other parties and then delivered to ValuSource for use in the Database. Due to the nature of the data reporting, collection and processing, ValuSource is unable to warrant the data for accuracy.

Database Characteristics – the entire Database

The Database is updated every quarter, so totals will change over time. There will also be small changes in the statistical analysis of the database. The following data is as of October, 2014, when this User Guide was published (data collected between 2010 and 2013). A subscriber to the database may perform this analysis for the current characteristics of the Database, using the data download from the Database.
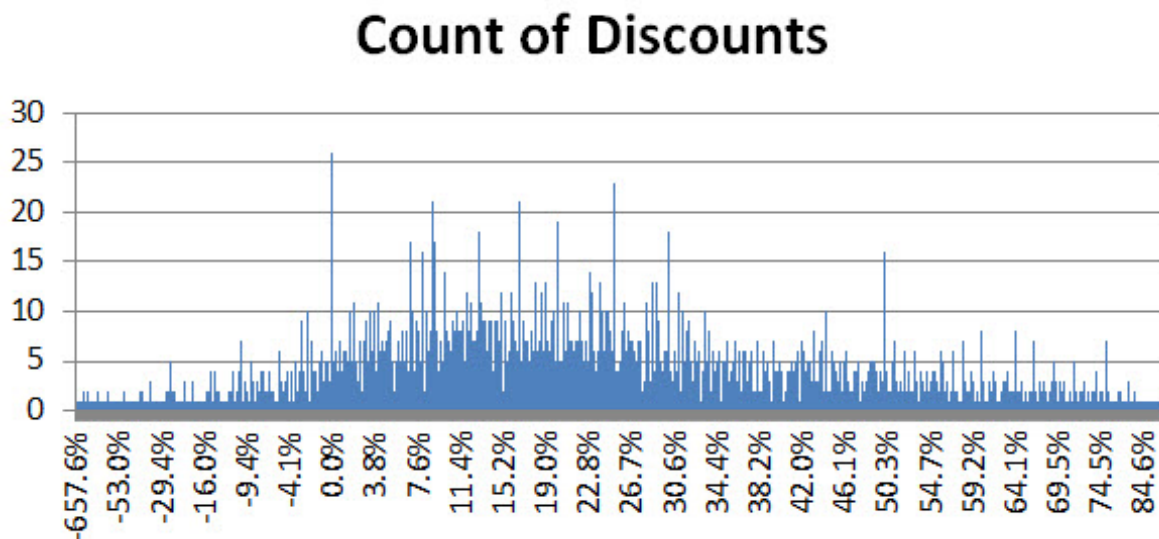
- Total records: 3,538

- 4-digit SIC codes: 373

- Median block-size (as percentage of total shares): 11.8%

- Median discount: 20.7%

- Average discount: 22.4%

- Standard Deviation: 0.299

- Issue dates: 1/2/2001 – 12/31/2013

---

1 http://www.privateraise.com/
2 http://www.thestreet.com/

Count of Discounts

FIgure 1: Range of Discounts

Creating a Restricted Stock Study with the Pluris DLOM Database

One approach to calculating a DLOM from a restricted stock study based on the Pluris DLOM Database is included with the subscription to the Database. It is important to note that this is only one approach of all possible approaches to calculating a DLOM based on the Database. Every subscriber to the Pluris DLOM Database has access to the entire set of transactions, and is free to use the data to provide empirical support to a DLOM based on any approach or theory favored by the valuator. What follows is an exposition of the approach included with the subscription to the data.

Using the Included Approach

The included approach is relatively easy to use. This simplicity does not relieve the valuator from understanding and endorsing the theory that supports this approach and the observations that led to the theory. In other words, this is not a plug-in-numbers calculator for DLOMs.

5

Because the included approach employs a restricted stock study, the valuator must have a clear understanding of restricted stock and the impact of Rule 144[1].

The valuator should have a firm grasp on the analyses that produce the inputs to the calculation of the DLOM, which are set out below. The valuator should also be able to restate the reasoning underlying the 'two-step' or RSED + PEDI approach. For a list of articles relating to observations from restricted stock studies and the development of the theory underlying the RSED and PEDI, see Appendix B: Developing the RSED and PEDI Concepts.

The valuator must also understand that the DLOM determined with the included method may not be the final answer. As the courts have noted in a number of cases, most notably Mandelbaum[2], the valuator is also responsible for considering other factors that might influence the DLOM.

The Theory Underlying the Included Approach

Between 2001 and 2010, Espen Robak analyzed transactions in restricted stock from sources that included the FMV Restricted Stock Study , the Pluris DLOM Database and the LiquiStat™ databases, and observed discounts in those transactions and drew conclusions that can be summarized as follows:

1. Discounts varied significantly throughout any large sample of transactions, bringing the 'benchmark approach' of using averages or medians into serious question

2. Comparing over-the-counter traded equities versus exchange-traded equities showed significantly higher discounts for the over-the-counter securities

3. The largest, least-liquid blocks (those with longer than average holding periods), the average and median discount could be as much as 10 to 15 percentage points higher than those for small block size.

4. There was a significant impact of risk on the mar-

---

1 As most valuators are aware, Rule 144 covers "Selling Restricted and Control Securities. Information available at http://www.sec.gov/investor/pubs/rule144.htm

2 BERNARD MANDELBAUM, ET AL., n1 Petitioners v. COMMISSIONER OF INTERNAL REVENUE, Respondent, UNITED STATES TAX COURT, T.C. Memo 1995-255 June 12, 1995, As Corrected June 20, 1995

ketability discount, in that "…smaller, less profitable entities, and those with a higher degree of balance sheet risk, will tend to have higher discounts."

5. Higher discount samples tend to have higher median volatility statistics (based on the Chicago Board Options Exchange Volatility Index) than lower discount samples

6. The size of the DLOM is a function of risk, with four primary determinants of this risk:

   • Size

   • Balance sheet risk

   • Profitability

   • Distributions

7. There was a negative correlation between the discount and

   • The publicly traded stock price (aggregate)

   • Total dollar revenue

   • Earnings and net profit

   • Dividend payout ratio

   • Total assets

   • Shareholder equity book value

   • Price per share

   • Trading volume of the stock

   • Dollar value of block size

8. There was a positive correlation between the discount and

   • Blocksize expressed as a percentage of total shares

   • Stock volatility ("expressed as the annualized standard deviation of the continuously compounded return on the stock")

   • Market-to-book ratio ("as measured by the subject entity's market value divided by the subject entity's book value of shareholders' equity")

9. Large block transactions have liquidity constraints similar to those of private equity. This is due to the liquidity restrictions of Rule 144A, leading the purchaser of such large blocks to sell them in private transactions, rather than waiting for the 'dribble out' provisions of the Rule to permit sale in a public market. This allows such transactions to act as a proxy for a part of the DLOM, termed the Restricted Stock Equivalent Discount (RSED). 'Holding periods' are not relevant as restricted stock can be sold at any time, in a private transaction.

10. The DLOM implies a lack of access to the public markets. The liquidity constraints on stock in a privately held company are analogous, but not identical to those of restricted stock in public companies. Purchasers of restricted stock have reasonable expectations of access to the public markets at some point, while a minority investor has little or no expectation of such access for the stock in a privately held company. This indicates a need for an additional component to the DLOM, called the Private Equity Discount Increment (PEDI), representing the discount due to the greater degree of illiquidity to which most interests in private entities are subject, as compared to a 'normal' Rule 144 restricted stock.
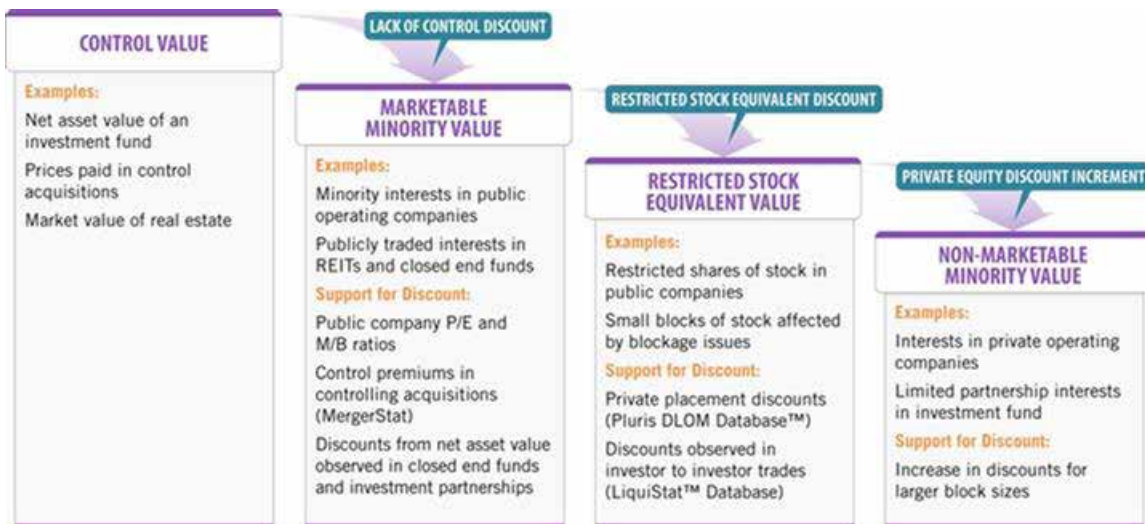

FIgure 2: Levels of Value

The calculation of the RSED provided with the database subscription is based on indications of size, balance sheet strength, stock price volatility, industry group, profitability, growth and dividend yield. The calculation of the PEDI provided with the

database subscription is based in part on the RSED and in part from the range of values in the database. How the actual numbers are derived is explained below, in the Calculating RSED and PEDI section.

Selecting Transactions for a Restricted Stock Study

Given the courts' stated preference for recent data, the valuator seeking to select data for calculating a DLOM will wish to select recent transactions from the database, but probably not those occurring after the valuation date. The valuator can select transactions based on SIC codes, volatility, market capitalization, sector, revenue, assets, block size, issue date, market to book ratio, stock price, book value, EBITDA, registration rights, block size (in volume) and Blocksize (in quarters to sell).

Other search parameters include low volume stocks, penny stocks, pink sheet stocks and deals with warrants. All search parameters can be 'stacked', meaning that the resulting search is the intersection of all the search parameters used. In other words, the search parameters are treated with a Boolean 'AND'. See Appendix C: Mechanics of Using the Pluris DLOM Database for detailed look at searching with web browser or from within a ValuSource valuation software application.

The Calculation Model Provided With the Subscription

Notes on the data in the examples below: the data in the figures in this section are for illustrative purposes only. For the examples, XYZ Company ("Subject Company") is a provider of innovative business and financial management solutions for small and medium-sized businesses, consumers, accounting professionals, and financial institutions (SIC Code 737). We are to value a non-marketable, minority interest in XYZ Company ("Subject Interest") as of December 31, 2011. The following are certain traits of XYZ Company:

Total Assets	$5,100,000
Total Revenues	$3,900,000
EBITDA	$1,000,000
Net Income	$634,000
Net Profit Margin	16.3%
Total Equity	$2,600,000
Enterprise Value	$4,000,000

Due to the variability of discounts within industries, rather than selecting transactions by SIC, we selected first for financial characteristics close to our subject company. We began by excluding Penny Stocks, low volume stocks, large gap stocks and Pink Sheet Stocks, to provide a greater central tendency of discounts. Next, we selected transactions for entities within a range of total assets from $4M to $6M, then selected for entities within a revenue range of $3M to $5M. These combined parameters produced a sample of 20 transactions.

User-Selected Transactions

The data for the transactions selected by the user are prepared for download and a statistical analysis is automatically performed that provides minimum, maximum, mean, median, standard deviation and count for the user-selected transactions. The user can find this information in the 'Data' and 'Statistics' tabs of the downloaded workbook.   The user-selected transactions are also divided into quartiles for comparison with the subject company data for determining the Restricted Stock Equivalent Discount (RSED) (see details below).

The Entire Database in Quartiles

As part of the calculation model, the entire database, excluding penny stocks, Pink Sheet stocks, issues where the time between the issue date and the first announcement exceeds 90 days and stocks with low trading volumes, is also divided into quartiles for comparison with the subject company data for determining the Restricted Stock Equivalent Discount (RSED) (see details below).

Calculating the Restricted Stock Equivalent Discount (RSED)

Part of the Excel workbook that makes up the download from the Pluris DLOM Database is the RSED calculation model, found in the "RSED" tab. There are three parts to the model, beginning with the "Analysis of Data Download", where subject company data is compared to the quartiles of the transactions selected by the user.

The number of transactions selected will appear in the upper right corner of the model. As the subject company data is en-

tered, the quartile and median values will appear. If the user feels it appropriate, a weighting factor can be applied to one or more of the calculations.

Method #1: Analysis of Data Download   **Count**   **20**

Lack of Marketability Analysis: Restricted Stock Equivalent Discount

Valuation Parameters	Subject Company Traits	Data Quartile/Grouping	Indication Median	Weight
Total Assets ($)	5,100,000	2Q	33.1%	1.00
Total Revenues ($)	3,900,000	3Q	30.1%	1.00
EBITDA ($)	1,000,000	1Q	31.0%	1.00
Net Income/ (Loss) ($)	634,000	1Q	40.1%	1.00
Net Profit Margin	16.3%	N/A	N/M	1.00
Equity (Book Value) ($)	2,600,000	2Q	24.9%	1.00
Enterprise Value ($)	4,000,000	4Q	25.4%	1.00
Market-to-Book Value (1)		N/A	-	1.00
Custom Field #1		N/A		0.00
Custom Field #2		N/A		0.00

Indicated Restricted Stock Equivalent Discount (RSED)   23.1%

Concluded Restricted Stock Equivalent Discount (RSED)   **23.1%**

FIgure 3: RSED, Step 1

The second part of the model compares the subject company data to the quartiles of the entire database, excluding penny stocks, Pink Sheet stocks, issues where the time between the issue date and the first announcement exceeds 90 days, large gap transactions and stocks with low trading volumes. These transactions are excluded due to their tendency to skew the results, due to the large number of outliers. The subject company data is automatically filled in from the first part of the model. The user also has the option to apply weighting factors to the different line items.

Method #2: Analysis of Entire Database **Count** **2388**

Lack of Marketability Analysis: Restricted Stock Equivalent Discount

Valuation Parameters	Subject Company Traits	Data Quartile/Groupin	Indication Median	Weight
Total Assets ($)	5,100,000	4Q	33.2%	1.00
Total Revenues ($)	3,900,000	3Q	21.3%	1.00
EBITDA ($)	1,000,000	2Q	24.1%	1.00
Net Income/ (Loss) ($)	634,000	1Q	12.3%	1.00
Net Profit Margin	16.3%	1Q	9.4%	1.00
Equity (Book Value) ($)	2,600,000	4Q	31.1%	1.00
Enterprise Value ($)	4,000,000	4Q	23.9%	1.00
Market-to-Book Value	-	N/A	-	1.00
Custom Field #1	-	N/A		0.00
Custom Field #2	-	N/A		0.00

Indicated Restricted Stock Equivalent Discount (RSED) 19.4%

Concluded Restricted Stock Equivalent Discount (RSED) **19.4%**

FIgure 4: RSED, Step 2

The third part of the model combines the RSED concluded from the user-selected transactions with the RSED concluded from the Entire Database. The user can apply weighting to adjust the results.

Reconciliation of Methods

		Weight
Concluded Restricted Stock Equivalent Discount (RSED) - Data Download	23.1%	1.00
Concluded Restricted Stock Equivalent Discount (RSED) - Entire Database	19.4%	1.00
Indicated Restricted Stock Equivalent Discount (RSED)	21.3%	
Concluded Restricted Stock Equivalent Discount (RSED)	**21.3%**	

Notes:
(1) Use market value of equity (on a marketable minority basis), as determined from your valuation, and divide by book value of equity from the subject company financial statements

FIgure 5: RSED, Step 3

Calculating the Private Equity Discount Increment (PEDI)

The first component used in calculating the PEDI (and included in the data download) is the Blocksize/Quarters-to-Sell table. A 'quarters-to-sell' statistic is calculated for each transaction in the database - an estimate of the time it would take to liquidate the entire block in the market. This table is recalculated each quarter when the Pluris DLOM Database is updated. The purpose of the Blocksize/Quarters-to-Sell Table is simply to isolate and identify the least-liquid blocks, the ones which are the most comparable to closely-held interests. It is our view that the "quarters to sell" statistic adequately serves this purpose.

The statistic is taken for each block as a whole, not the positions of individual investors. The quarters to sell statistic is realized by applying both limits on selling in a given quarter from Rule 144 - 1% of total shares outstanding and the average 4-week volume limits. The lower of the two numbers is used, due to a belief that the numbers are driven as much by market forces as much as the security regulations. While Rule 144 uses the larger of the two values, the 'greater of' formulation does not apply to bulletin-board-traded shares.

The minimum, maximum and median values for Blocksize/Quarters-to-sell and Common Stock Discount are calculated for each of the four quartiles of the entire Database, excluding penny stocks, Pink Sheet stocks, issues where the time between the issue date and the first announcement exceeds 90 days and stocks with low trading volumes. These data are all part of the download from the Database, so the user can quickly duplicate the analysis or perform a different analysis. A sample from the Database at the time this Guide was created:

	Blocksize/Quarters to Sell			Common Stock Discount			
	Min	Max	Median	Min	Max	Mean	Median
Qrt. 1	0.2x	6.5x	4.0x	-77.40%	85.80%	19.30%	15.80%
Qrt. 2	6.5x	19.1x	9.8x	-78.60%	80.80%	20.30%	17.00%
Qrt. 3	13.0x	19.1x	16.0x	-57.00%	80.90%	21.20%	18.80%
Qrt. 4	19.1x	911.0x	29.8x	-78.20%	91.00%	25.80%	22.70%

FIgure 6: Blocksize / Quarters to Sell

The Blocksize/Quarters-to-Sell table is further analyzed to find the range of discounts for the larger blocks with higher Blocksize/Quarters-to-Sell values. These transactions are grouped by those with Blocksize/Quarters-to-Sell values equal to or greater than 35, those equal to or greater than 30 and those equal to or greater than 25. The mean and median discounts for each group are calculated. A sample from the Database at the time this Guide was created:

| | Blocksize/Quarters to Sell | | | |
	<=35	<=30	<=25	All
Mean	30%	29%	29%	21%
Median	26%	24%	24%	19%

FIgure 7: Blocksize /Quarters to Sell Analysis

Note that the mean and median discounts for the entire database (excluding penny stocks, Pink Sheet stocks, issues where the time between the issue date and the first announcement exceeds 90 days and stocks with low trading volumes) are also calculated. At this point, values are extracted from this analysis to create a range of inputs for the PEDI calculation as follows:

The mean and median discounts for the entire database ('All') are subtracted from the =35 and =25 mean and median values. This calculation yields the upper and lower values for the 'Additive' calculation of the PEDI (see below). Using the values in the table above, 30% – 21% = 9%, 29% – 21% = 8%, 26% -19% = 5% and 24% – 19% = 5%. Choosing the highest and lowest values tells us the Additive inputs to the PEDI calculation will be 5% and 9%.

Note that the numbers shown in the table are rounded to the nearest whole number, but the actual arithmetic included decimals, and the Excel standard for rounding n.5 (or n.05 or n.005, etc.) is to round up only for exactly n.5 and round down for n.4999, so 1.4999 will yield 1.4.

Next, the Multiplicative inputs to the PEDI calculation are determined by dividing the large-block discounts by the average and median discounts for the entire database ('All'). The average or median for all transactions is used as the "base discount" since the entire data-set is used when determining the RSED. Using the example above, this produces 30% / 21% =

1.4, 26% / 19% = 1.4, 29% / 21% = 1.4, 24% / 19% = 1.3.

Again selecting the highest and lowest values tells us the Multiplicative inputs to the PEDI calculation will be 1.3x and 1.4x. The PEDI is calculated from the RSED and the two sets of figures from the Blocksize/Quarters-to-Sell analysis. This model is found in the "PEDI" tab of the downloaded workbook:
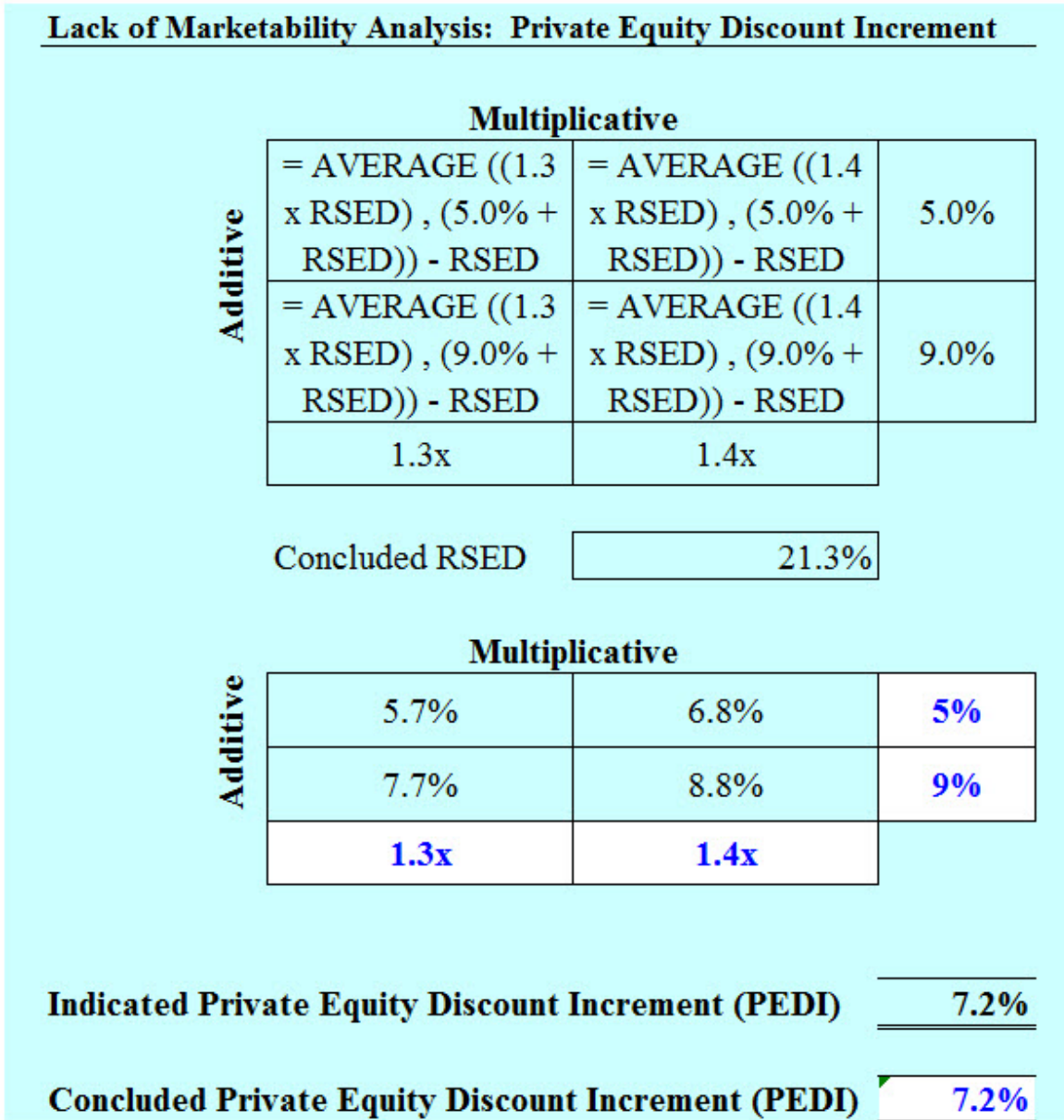
Lack of Marketability Analysis: Private Equity Discount Increment

Multiplicative

Additive	= AVERAGE ((1.3 x RSED) , (5.0% + RSED)) - RSED	= AVERAGE ((1.4 x RSED) , (5.0% + RSED)) - RSED	5.0%
	= AVERAGE ((1.3 x RSED) , (9.0% + RSED)) - RSED	= AVERAGE ((1.4 x RSED) , (9.0% + RSED)) - RSED	9.0%
	1.3x	1.4x	

Concluded RSED   21.3%

Multiplicative

Additive	5.7%	6.8%	**5%**
	7.7%	8.8%	**9%**
	1.3x	**1.4x**	

Indicated Private Equity Discount Increment (PEDI)   7.2%

Concluded Private Equity Discount Increment (PEDI)   7.2%

FIgure 8: PEDI

Finally, the RSED and the PEDI are combined to produce the Discount for Lack of Marketability (figure 7). This model is found in the 'Discount Conclusion' tab in the downloaded workbook.

15

Lack of Marketability Analysis: Discount Conclusion

Concluded Restricted Stock Equivalent Discount (RSED)	21.3%
Concluded Private Equity Discount Increment (PEDI)	7.2%
Indicated Discount for Lack of Marketability (Rounded)	**29.0%**
Concluded Discount for Lack of Marketability (Rounded)	**29.0%**

FIgure 9: Discount Conclusion

At this point, the user has a concluded DLOM from a restricted stock study, and can apply those adjustments indicated by other factors.

Appendix A: Readings in DLOM

Mukesh Bajaj, David J. Denis, Stephen P. Ferris and Atulya Sarin, "Firm Value and Marketability Discounts", Journal of Corporation Law, Iowa City: University of Iowa College of Law (Fall, 2001) available at: http://people.stern.nyu.edu/adamodar/pdfiles/articles/firmvalueanddiscounts.pdf Discount for Lack of Marketability: Job Aid for IRS Valuation Professionals, available at http://www.irs.gov/pub/irs-utl/dlom.pdf.

Lance S. Hall, "A Response to the IRS Job Aid on DLOM", The Value Examiner November/December 2011, Salt Lake City: The National Association of Certified Valuators and Analysts Camelia Szathmary Miclea, Violeta Sacui, "The Levels of Value in Business Valuation. The Discount for Lack of Marketability", West University Timisoara, available at http://fse.tibiscus.ro/anale/Lucrari2012_2/AnaleFSE_2012_2_093.pdf

Shannon Pratt, "Overview of Business Valuation Discounts and Premiums and the Bases to Which They are Applied", available at http://www.shannonpratt.com/article/overview_business_valuation_discounts_premiums.pdf

John Stockdale Sr., BVR's Guide to Discounts for Lack of Marketability (5th ED), Portland: Business Valuation Resources (2013), available at http://bvresources.com. Espen Robak, "The Current State of Marketability Discounts", ACTEC Journal, Vol. 30, Fall 2004, available (paid subscription required) at http://heinonline.org/HOL/LandingPage?handle=hein.journals/acteclj30&div=20&id=&page=

Espen Robak and Lance S. Hall, "Bringing Sanity to Marketability Discounts: A New Data Source, available at http://people.stern.nyu.edu/adamodar/pdfiles/eqnotes/fmvstudyarticle.pdf

Z. Christopher Mercer, Quantifying Marketability Discounts: Developing and Supporting Marketability Dicsounts in the Appraisal of Closely Held Business Interests, Brockton, MA: Peabody Publishing (1997), available at http://amazon.com and http://bn.com.

Appendix B: Developing the RSED and PEDI Concepts

2001 Espen Robak and Lance S. Hall, "Bringing Sanity to Marketability Discounts: A New Data Source, available at http://people.stern.nyu.edu/adamodar/pdfiles/eqnotes/fmvstudy-article.pdf

2002 Espen Robak, "Marketability Discounts: Using Four Measures of Risk and Adjusting for Relative Liquidity", Business Valuation Update (August, 2002), Portland: Business Valuation Resources, available at http://www.bvmarketdata.com/pdf/bvu0802-marketabilitydiscounts.pdf

2004 Espen Robak, "Liquidity and Levels of Value", Deluxe BV Update (October, 2004), Portland: Business Valuation Resources, available at http://www.bvmarketdata.com/pdf/LiquidityFramework.pdf

2004 Shannon Pratt, "Editor's Column: 'Levels of Value' Chart to Be Updated to Reflect Difference in Restricted Stock vs. Private Stock", Business Valuation Update (October, 2004), Portland: Business Valuation Resources, available at https://www.bvmarketdata.com/pdf/LevelsOfValue.pdf

2004 Espen Robak, "The Current State of Marketability Discounts", ACTEC Journal, Vol. 30, Fall 2004, available (paid subscription required) at http://heinonline.org/HOL/LandingPage?handle=hein.journals/acteclj30&div=20&id=&page=

2007 Espen Robak, "Lemons or Lemonade: A Fresh Look at Restricted Stock Discounts", Valuation Strategies January/February 2007, available at http://www.pluris.com/files/PDFs/Lemons_or_Lemonade.pdf

2010 Espen Robak, "An Updated Approach to Marketability Discounts: Evidence from the Pluris DLOM Database", Valuation Strategies May/June 2010, available at http://www.valusource.com/files/Updatedapproach.pdf

Appendix C: The Mechanics of Using the Pluris DLOM Database

Requirements

Because the Pluris DLOM Database™ is a web-based service, there are no operating system requirements. The service supports the following browsers:

- Internet Explorer 7 and later
- FireFox 3.5 and later

While other browsers may work with the web server, free support for problems in accessing the service is restricted to those listed.

The Pluris DLOM Database provides output in the form of an Excel 2003-2007 workbook, so a computer equipped with Excel 2003, 2007, 2010, 2013 or an Excel-compatible software package is required. A connection to the internet is required and it is recommended that a dedicated connection (DSL, cable modem, Uverse, etc.) be used rather than a dial-up or cellular connection.

Connecting to the Pluris DLOM Database

There are two ways to access the Pluris DLOM Database – using a web browser with Excel and from within a copy of ValuSource's valuation software. Users of ValuSource valuation software (versions 5.6, 6.6 and 7), including Express Business Valuation, ValuSource Pro and Business Valuation Manager Pro can use the built-in database function to directly access the Pluris DLOM Database. Excel users with a subscription can use any supported web browser to search the database and download data. Note that the Valuation Data Explorer does not work with the Pluris DLOM Database.

From a ValuSource Valuation Software Application

The latest versions of ValuSource's Express Business Valuation, ValuSource Pro and Business Valuation Manager Pro all provide automated access to the Pluris DLOM Database (with a current

subscription to the Database) and the importing of selected data into the applications. When a user first installs one of these software applications, a username and password will be requested. Once these have been provided, the automated (non-browser) connections to the Pluris DLOM Database and other ValuSource valuation databases will performed by the software.

From within a ValuSource valuation application, the user simply clicks on the Database tab and clicks on the Pluris DLOM Database tab (ValuSource Pro 6 used in examples):

Then, using the search parameters, the user selects possible transactions for a restricted stock study:


The user can 'stack' search parameters to refine the search to match the subject company as much as possible. If the user

wishes, the search can be restarted by clicking on the Clear button. To see the details on any individual selection, the user can click on the Show Detail button:

2 Review Records (9)		Show record: ◄◄ ◄ 1 ► ►◄			
Placement ID:	10,150	EBITDA (LTM) ($m):	0.00	Average Volume (1M):	35,740
Issue Date:	9/30/2005	Pre Tax Income (LTM) ($m):	-1.00	Average Volume (3M):	34,351
Gross Proceeds ($):	6,000,000	Net Income/ (Loss) (LTM) ($m):	-1.00	Average Volume (6M):	35,262
Issuer Name:	Dune Energy, Inc.	Net Profit Margin (LTM):	-0.32	Avg Volume (1Y):	26,722
Symbol:	DNE	Total Debt (LQ) ($m):	9.00	Trading Volume:	26,722
Exchange:	NYSE Amex	Total Equity (LQ) ($m):	15.00	Trading Volume ($):	53,711
SIC CODE:	1,311	Enterprise Value ($):	102,970,000	Shares Sold:	3,243,243
Sector:	Energy: Oil & Gas	EV/ Revenue (LTM):	41.00	Purch Price:	1.85
Large Gap Close-Annc# (Y/N):	N	P/E (LTM):		Registration Rights:	MR
Low-Volume Stock (Y/N):	N	P/E (FY+1):		Warr. Issued?:	N
Penny Stock (Y/N):	N	P/E (FY+2):		Volatility:	1.36
Pink Sheet Stock (Y/N):	N	P/BV:	6.10	Number of Warrants:	
VWAP (10D):	2.12	Z-score:	-0.01	Exercise Price:	
C-7:	2.19	Dividend Yield:	0.00	Call Cap (Y/N?):	
C-1:	2.09	Shares Outstanding:	47,002,000	Cashless Exercise:	
C+0:	2.01	Market Capitalization ($):	94,470,000	Expiration Date:	
C+1:	2.01	Market to Book Ratio:	6.10	Fair Market Value Per Warrant:	
C+3:	1.97	Beta (1Y S&P 500):	-0.33	Warrants Portion of Gross Proceeds:	
C+7:	1.81	VIX:	0.12	Common Stock Portion of Proceeds:	6,000,000
C+10:	1.85	Voly (Daily 3M):	0.70	Block size /Shares Outstanding):	0.07

When the user feels a particular transaction fits the fact pattern of the engagement, the transaction can be selected by clicking on the icon in the Select column. When all of the desired companies have been selected, the user simply clicks on the Analysis tab. The data and calculations automatically appear in the Appraisal/Premiums and Discounts/Pluris DLOM section of the navigation tree:
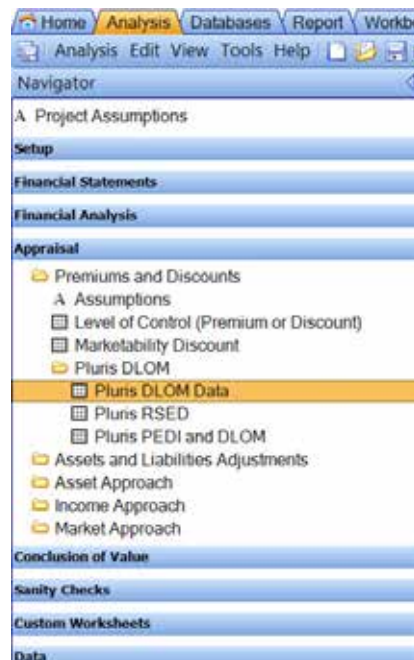
If the user is satisfied with the calculations from the data selected (see The Case Study, below, for the mechanics of the calculation), he or she can move on to other parts of the analysis.

The concluded DLOM will appear in the worksheets:

Excess/Non-operating Assets	10,000
Apply Minority Interest Discount	26.00%
Apply Marketability Discount	28.12%
Adjusted Excess/Non-Operating Assets	9,574
Calculated Conclusion of Equity Value	1,463,376
SELECTED CONCLUSION OF EQUITY VALUE	1,463,400

Finally, for valuation software users with the Business Valuation Report Writer, the generated report will contain several pages that describe the Pluris DLOM Database and the calculation of the RSED, PEDI and the DLOM, as well as the calculations performed and the DLOM conclusion reached.

For a complete text of the sample report, please see below.

Using a Web Browser and Excel

Enter the URL "vswebapp.com" into the address line of your browser:

enter the username and password supplied by Sales in the indicated fields:

Selecting the Pluris DLOM Database Application

Once your Username and Password have been accepted, you

22

will be presented with the logged-in screen. By clicking on the "Choose Your Application" drop down arrow, you will see a list of the applications you are subscribed to on vswebapp.com. Click on the "Pluris DLOM Database" to be taken to the application.

Selecting Data

The user can 'stack' search parameters to refine the search to match the subject company as much as possible. If the user wishes, the search can be restarted by clicking on the Clear button. To see the details on any individual selection, the user can click on the Show Detail button:

Downloading Data

When the user has narrowed the search down to the desired transaction records, the data can be downloaded to Excel by clicking on the Data Only button in the Export Records step:

The data is then downloaded into an Excel workbook, which the user can save. The workbook contains sheets for the data downloaded:

- Data: the data from the selected transactions

- Statistics: a short statistical analysis of the data

- RSED: the calculations for the RSED – where the user can input financial data on the subject company

- PEDI: the calculations for the PEDI

- Discount conclusion: the results of all calculations

- Download Calculations: quartile calculations for the selected data

- DLOM calculation: calculations for the entire Database

- Version: the version of the Database and the last update date

Signing out of the Database

Customers connecting to the Pluris DLOM Database from ValuSource software with web browsers should click on the "Home" button at the top of any screen in vswebapp.com.

When the Home screen is presented, the user can leave vswebapp.com by clicking on the "Log Out" button.

Using Valuation Data Explorer with Excel

The Valuation Data Explorer, ValuSource's older data access tool, does not work with the Pluris DLOM Database.

Appendix D: Frequently Asked Questions

Do you have a question not included below? Submit your question via email to marketing@valusource.com. We will forward the answer to you and include your question and the answer in future versions of the Guide.

1. Most people I talk to say the best way to estimate the discount is using restricted stock studies. Why should I use the Pluris DLOM Database instead?

   a. The Pluris DLOM Database actually IS a restricted stock study, the difference being that the database is so vast (more than 3,000 transactions) that it allows you to do your own research and generate your own study instead of just relying on someone else's research, or an average discount.

2. How is the discount calculated?

   b. For each of the transactions, the amount paid for the restricted stock is compared with the trading price for the same shares (same ticker) in the public markets at that point in time. The discount is calculated as 1 minus the price paid for the restricted stock divided by the price paid for unrestricted stock. We believe this discount is a reflection of the lower degree of liquidity or marketability enjoyed by the buyer of the private placement.

3. What kind of transactions are these?

   a. Each transaction in the Pluris DLOM Database is a restricted stock private placement. The database has this in common with almost every other restricted stock study listed in the standard valuation textbooks (see, for example, Shannon Pratt's *Valuing a Business,* 5th Ed., p. 431). Such private placement transactions are also commonly referred to as private investments in public equity, and abbreviated, PIPEs.

4. Why do you include transactions in the database where warrants are attached to the shares?

   It's important to note, first, that all of the transactions in the Pluris DLOM Database are common stock private placements. In other words, an investor in a public com-

pany is buying restricted stock from the issuer. So each transaction measures the discount applicable to restricted stock only. However, some issuers of restricted stock are unable to sell their shares without some kind of a "sweetener" – and those are typically in the form of warrants. The values of those warrants are, thus, part of the discount (the sweetener is really a form of a price concession) for the restricted shares bought.

Of the more than 3,000 transactions in the Pluris DLOM Database, some have no warrants attached, while some (less than half) do. However, we believe, based on published research, that taking a sample of companies that are able to sell restricted stock without warrants attached would be a biased sample. The resulting discounts from such an analysis would be biased downward. We believe that this approach is inappropriate. Nevertheless, since the Pluris DLOM Database includes data on transactions both with and without warrants, analysts who want to generate the discount without those transactions can easily do so.

5. I have heard that discounts for restricted stock are not reflective of the DLOM for private companies. Comment?
   a. Yes and No. For the most typical, relatively small, private placement of restricted stock, the discount would tend to be lower than what you would apply to a private company. However, these transactions are still useful to the business valuation expert. We call this discount the Restricted Stock Equivalent Discount (RSED). For the average private company, we think it's appropriate to add an incremental discount on top of the RSED to get to the "full" DLOM. We use our database to generate this increment as well (see below).

6. Why would I calculate a warrant value then calculate a DLOM value off those calculations? The DLOM percentage doesn't seem real to me. Isn't it just a calculation of a calculation? Does the calculated RSED account for the inclusion of warrants?
   a. It's inaccurate to say that these are a calculation of a calculation. The discounts for all the transactions in the database are calculated as the difference between the price paid for the restricted stock purchased and

the price the same (but unrestricted) stock was trading for in the public market at the same time. However, in some transactions, part of the total price was for warrants. (Typically, even in transactions with warrants attached, the part of the deal value that represents compensation for the warrants is small.) For those transactions, in order to arrive at the correct restricted stock discount, the warrant part has to be deducted first. Luckily, there is secondary market trading indications for what these warrants are worth.These adjustments were already made in the Database, so the resulting discuounts you see as a user are "pure" restricted stock discounts.

7. What is the RSED?

   a. RSED is an acronym for Restricted Stock Equivalent Discount. RSED was introduced as the fourth level of value in the early 2000's, and featured in articles and major publications (i.e. Shannon Pratt's *Valuing a Business*) as part of the new level of value of framework. The RSED represents an illiquid position that is not fully non-marketable (between marketable minority and non-marketable minority). At the RSED level, an analyst will compare and contrast the key risk characteristics of the subject company to the transactions contained in the Pluris DLOM Database. The comparative framework typically includes an analysis of key risk metrics (i.e. size, balance sheet risk, volatility, etc.), and primary and secondary Standard Industrial Code data sets. To arrive at a non-marketable minority interest of private held shares, an appraiser must make an additional illiquidity adjustment referred to as PEDI.

8. What is the PEDI?

   a. PEDI is an acronym for Private Equity Discount Increment. Since private placement transactions primarily reflect positions that are more liquid than privately held stock, a PEDI is the second step in the analysis for determining the lack of marketability associated with non-marketable minority interests. PEDI is determined by comparing the discounts associated with the largest block (most illiquid) transactions to the average and median discount indications

of all the transactions. Underlying this methodology is the notion that transactions in the largest blocks serve as the best proxy for the lack of marketability of any size positions in privately held companies.

To see how the PEDI is calculated, download the PEDI Calculation Guide at http://www.valusource.com/files/PEDI_Calculation.pdf

9. What is the standard deviation, the median, and average discounts in the database?

   a. Standard deviation =   0.303647
      Average =   22.4%
      Median =   20.8%
      NOTE: These figures are from 2001 - 2013

10. To what extent has regression analysis been used on this data to determine if there truly are specific factors that influence the discount?

   a. We have done significant regression analysis on the data to determine what factors influence the discount, some of which has been published. And we continue to explore indications from this research. As economic data, there is a significant natural variability in the discount. However, compared with other analyses, the Pluris DLOM Database stacks up very well in terms of statistical measures of "goodness of fit". For practical valuation work, you may still choose to use other methods such as quartile analysis to estimate the DLOM. However, that analysis can be supplemented with regression testing to ensure that the factors you're using are meaningful and statistically significant indicators of the discount.

11. What is a PIPE?

   a. Private Investment in Public Equity. Refers to a form of growth capital investment made into a publicly traded company. PIPE investments are typically made in the form of equity or equity-linked security that is unregistered for a certain period of time.

12. In the Database, what volume stocks are considered to be low volume stocks?

   a. When the common stock has a daily dollar trading vol-

ume of less than $5,000 a day. This is calculated as: transaction date closing price * last one year average daily trading volume (or applicable average daily trading volume)

13. If the Pluris DLOM Database is better than Mandelbaum, where has it been used in court?

a. We don't suggest that the Pluris DLOM Database is 'better than Mandelbaum'. We do, however, suggest that valuators who need to develop a DLOM should, as the court itself did in Mandelbaum, use a restricted stock study as part of the research and analysis in developing a DLOM, including the so-called 'Mandelbaum factors'.

b. The Pluris DLOM Database is the restricted stock study created by the individual valuator using the database that will be a part of the valuation and could be used as evidence in court. In defending a DLOM, the valuator has the ability to cite the criteria that were used to select the transactions that make up the restricted stock study and why those particular criteria were selected. When a source is cited in a court case, it is typically to justify some value derived from that source, such as a market multiple obtained from BIZCOMPS®, or a control premium from MergerStat. When a valuator uses the Pluris DLOM Database, they do not have to rely on an 'average' or 'median' DLOM derived from someone else's study. Instead, they have all the comparative criteria that caused them to use the particular restricted stock transactions in developing their DLOM.

14. Has the Pluris DLOM Database met the Daubert test?

a. We recommend that the individual valuator using the Pluris DLOM Database draw data for the valuator's own study of the DLOM as then use that data as evidence in court. In terms of Daubert tests, in the Gross case, the 6th Circuit Court of Appeals specifically addressed Daubert issues regarding Dr. Bajaj's 'novel' method of using his own restricted stock study in developing a DLOM in and found it met the Daubert tests. (Gross v. CIR, 272 F. 3d, 333 (2001)

15. Can I search by SIC code?

a. Yes, the Database is searchable by 2-, 3-, and 4-digit SIC codes, as well as 16 other search parameters, including volatility, market capitalization, revenue, assets, and block size.

16. Some authors say that SIC code doesn't have much to do with the amount of discount. How do I find relevant transactions with the Pluris DLOM Database?

a. In the past, some authors have stressed that the financial risk of the issuing firm has more impact on the discount. This is probably true for most industry classifications. However, there may be industries where the DLOM is significantly different from the average for reasons having to do with the perceived attractiveness (or lack thereof) of an investment in that industry. Previous restricted stock stuides simploy never had enough data to test this theory properly (not enough data points per SIC code). If you wish to pursue this approach as a supplement to other methods for developing your DLOM, the Pluris DLOM Database supports you with the ability to search on the SIC code in addition to such factors as block size, volatility and market-to-book ratio to select the transactions for your restricted stock study.

17. How large is the database and what is the timeframe covered?

a. The Pluris DLOM Database (October, 2014) includes over 3,538 transactions from 2001 to 2013 and is updated quarterly.

18. How are the PEDI numbers calculated, for example, 1.3x to 1.5x and 6% to 10%?

a. The numbers are calculated from the data. Records with the very largest blocks relative to average volume contained larger discounts. These large blocks were analyzed and compared to the entire database. Please see the explanation in **Calculating the RSED** and **Calculating the PEDI**, above.

Appendix E: Extract From A Sample Report

Please note: This report was generated with sample data only for the purposes of demonstrating the output from a ValuSource valuation software application that employed the Pluris DLOM Database as it existed at an earlier date and is for illustration purposes only. The values do not represent the current or future values in the Database. The data highlighted in yellow is a reminder to the valuator to edit to match the fact pattern of the valuation. The carets « » indicate information drawn from the data, calculations and user options of the application.

Appendix Marketability Discount

HELPER TEXT

(Note: Helper Text is inserted in the report template when explanatory materials are included. This provides the valuator with an initial draft that can be edited as desired.)

The paragraphs below explain some lack of marketability details. Edit this section to meet the fact pattern.

Marketability relates to the liquidity of an investment relative to a comparable and actively traded alternative. In essence, impairment of liquidity increases an investor's expected rate of return. As a result, the market-clearing price of a nonmarketable security is discounted relative to the price of its marketable counterpart. The discount for lack of marketability is stated as a percentage of a marketable value.

The valuation of share of stock in closely held corporations typically warrants a discount for lack of marketability. Many factors affect the liquidity of an investment. Among them are the following:

1. Number of shareholders

2. Size of the block of stock being valued

1. Restrictions on its sale by agreement or law

2. The absence of registration

3. The anticipated dividend flow attributable to the investment

When attempting to quantify these factors that influence liquidity into an appropriate discount for lack of marketability, it is necessary to consider the following factors:

1. **The holding period**. Without an active market, an investor must hold for an uncertain length of time until a liquidity event occurs. In general, longer holding periods without liquidity imply higher discounts for lack of marketability. An investor should reasonably characterize exit timing along a probability distribution. Although subjective, the relative probabilities of exit dates are reasonably related to the following:

    a. Historical ownership policies (insiders, outsiders, family, investors, etc.)

    b. Buy/sell or other shareholder agreements

    c. Management/ownership succession (age, health, competence, emerging liquidity needs)

    d. Business plans and likely exit strategies of the controlling owner(s)

    e. Emerging attractiveness for equity offering or acquisition

2. **Required holding period return.** To overcome the unattractiveness of the lack of liquidity, an investor in such securities expects a premium return in excess of that provided by liquid alternatives. Investment features that impair marketability will exact higher expected rates of return, which imply higher discounts for lack of marketability. Unattractive features of a lack of liquid security could include the following:

    a. Absence, inadequacy of or inability to pay dividends

    b. Subjective uncertainties related to the duration of the expected holding period and to achieving a favorable exit date valuation

    c. Restrictive shareholder agreements

    d. Various other features that increase uncertainty of cash flows

3. **Growth in underlying value during the holding period**. If an investment is appreciating, that growth will provide

a portion of the realized return during the holding period. Growth and marketability discounts are negatively correlated. As expected capital appreciation increases, discounts for lack of marketability decrease. Growth potential should be evaluated in the context of management's business plan, historical growth, and external factors such as emerging industry conditions and market valuations.

4. **Expected cash flow distributions during the holding period.** Holding period returns are also provided by interim cash flows (in addition to capital appreciation). As with growth, holding period cash distributions and discounts for lack of marketability are negatively correlated. Holding period cash flows (dividends, etc.) should be evaluated in the context of historical dividend policy, ability to distribute and the cash needs implied by the business plan.

Empirical Studies

Guidance as to the proper level of the discount can also be found in examining studies which have approached the question from several different perspectives. One approach is to analyze the differences in prices between publicly traded securities and those of restricted stocks of the same companies. Since a "lettered" stock is identical to the traded stock in all respects except marketability, the difference in price highlights the marketability discount. Among the more prominent studies are the following:

1. "Discounts Involved in Purchases of Common Stock," in US 92nd Congress, 1st Session, House, Institutional Investor Study Report of the Securities and Exchange Commission (Washington, DC: US Government Printing Office, March 10, 1971, 5:2444-2456, Document No. 92-64, Part 5);

2. A study of closed end investment funds (Milton Gelman, "An Economist-Financial Analyst's Approach to Valuing Stock of A Closely Held Company," Journal of Taxation (June 1972), p. 354);

3. A study of prices paid for restricted stocks (Robert E. Maroney, "Most Courts Overvalue Closely Held Stocks," Taxes, March 1973, pp. 144-54);

4. A study of prices paid for restricted stocks (J. Michael Maher, "Discounts for Lack of Marketability for Closely Held Business Interests," Taxes, September 1976, pp. 562-71; and,

5. A more recent study of restricted stocks (William L. Silber, "Discounts on Restricted Stock: The Impact of Illiquidity on Stock Prices," Financial Analysts Journal, July/August 1991, pp. 62-64.)

All of these studies identified median or average discounts in the range of 30-40% for prices of non-marketable stocks in comparison to marketable shares, which were otherwise deemed comparable. The SEC Institutional Investor study reflected a mean discount of 25.8% while the remainder had average discounts in the range of 33-35%.

A second approach is to analyze the relationship between the prices of companies whose shares were initially offered to the public (IPO) and the prices at which their shares traded privately within a five-month period immediately preceding the public offering. A series of studies conducted by John D. Emory at Robert W. Baird & Co., Inc. indicate median and mean lack of marketability discounts of 40% to 45% (see Emory, John D., "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock, February 1992 through July 1993," Business Valuation Review, December 1993, pp. 3-5).

The objective of the Emory studies is to relate the prices at which private transactions took place before an IPO and the price at which the stock was subsequently offered to the public, in order to gauge objectively the value of marketability. The majority of the companies in the survey reflected discounts exceeding 30%. The highest discounts indicated in the sample were 82% and 94%.

The implication of the studies is clear: presumably arm's length transactions taking place within a short time of the actual IPO's occur at substantial discounts to the ultimate public offering price. These studies support both the validity and magnitude of marketability discounts in general, and particularly for companies that are not public offering candidates and for which the prospects for shareholder liquidity may be remote.

Pluris DLOM Studies

The Pluris DLOM Database consists of PIPE transactions that have occurred over the last ten years. Because these transactions are considered restricted stock transactions, the transactions can be used as a substitute for a discount for lack of marketability. The strength of this methodology is that the study is customized to the unique circumstances of «Childs Clothing Store» Transactions in the database were selected by the process of …

The first step in calculating the DLOM is to segregate the transactions into quartiles and then compare that to the characteristics of the subject company. These characteristics are assets, revenues, EBITDA, net income/loss, profit margin, book value of equity, enterprise value and market. Each characteristic is then compared to the quartile value of the selected population and the entire data set. These two different methods are then weighted together. Using these two methods, the data is drilled down to find the best value for the subject company. The schedule below shows the numbers for method 1.

«

Method #1: Analysis of Data Download   **Count**   **70**

Lack of Marketability Analysis: Restricted Stock Equivalent Discount

Valuation Parameters	Subject Company Traits	Data Quartile/Grouping	Indication Median	Weight
Total Assets ($)	3,728,000	4Q	14.5%	1.00
Total Revenues ($)	5,966,000	4Q	19.1%	1.00
EBITDA ($)	986,000	3Q	51.9%	1.00
Net Income/ (Loss) ($)	386,760	2Q	12.0%	1.00
Net Profit Margin	6.48%	2Q	12.0%	1.00
Equity (Book Value) ($)	2,078,000	4Q	18.3%	1.00
Enterprise Value		4Q	0.0%	0.00
Market-to-Book Value		4Q	17.9%	0.00
Meth 1 Indicated Restricted Stock Equivalent Discount (RSED)			21.3%	

»

The schedule below is for method 2, the entire data set.

«

Method #2: Analysis of Entire Database   **Count**   **2357**

Lack of Marketability Analysis: Restricted Stock Equivalent Discount

Valuation Parameters	Subject Company Traits	Data Quartile/Grouping	Indication Median	Weight
Total Assets ($)	3,728,000	4Q	33.3%	1.00
Total Revenues ($)	5,966,000	4Q	28.7%	1.00
EBITDA ($)	986,000	3Q	23.7%	1.00
Net Income/ (Loss) ($)	386,760	2Q	24.3%	1.00
Net Profit Margin	6.5%	2Q	13.8%	1.00
Equity (Book Value) ($)	2,078,000	4Q	31.3%	1.00
Enterprise Value	-	4Q	23.9%	0.00
Market-to-Book Value	-	4Q	10.7%	0.00
Meth 2 Indicated Restricted Stock Equivalent Discount (RSED)			25.9%	

»

The next schedule reconciles the two together.

«

Reconciliation of Methods

		Weight
Concluded Restricted Stock Equivalent Discount (RSED) – Data Download	21.3%	1.00
Concluded Restricted Stock Equivalent Discount (RSED) – Entire Database	25.9%	1.00
Indicated Restricted Stock Equivalent Discount (RSED)	23.6%	
Concluded Restricted Stock Equivalent Discount (RSED)	23.6%	

»

At this point, the RSED (restricted stock equivalent discount) has been determined. Because PIPE transactions do have a public market, albeit very small, and small companies do not, an additional amount known as the PEDI (private equity discount increment) will be added to the RSED to determine the DLOM. The PEDI is derived by taking large block transactions and comparing those to the entire data set.

The additional amounts for the large blocks range from «6%» to «10%» higher than the whole data set or if you were to take a ratio then they would be «1.3x» to «1.5x» times higher than the whole data set. These large block transactions are more similar to the equity being valued here so an average is added incrementally to the RSED based on the higher discounts. The following schedule shows the calculated DLOM or RSED plus the calculated PEDI.

Private Equity Discount Increment

Concluded RSED 23.6%

	Multiplicative		
Additive	6.5%	8.9%	6%
	8.5%	10.9%	10%
	1.3x	1.5x	

Indicated Private Equity Discount Increment (PEDI) 8.7%

Concluded Private Equity Discount Increment (PEDI) **8.7%**

Marketability Discount

Indicated DLOM 32.3%

Concluded DLOM **32.3%**

Court Decisions[1]

Further guidance for marketability discounts can be found in various court decisions. These decisions provide insight into the discounts allowed in various circumstances. «I» look at evidence from court decisions, not to cite as direct evidence in the instant case, but to review how courts have previously interpreted the objective evidence presented. In addition, «I» look to court cases for general guidance concerning the nature of evidence deemed acceptable in previous decisions.

A survey performed by Thomas Solberg (Thomas A. Solberg, "Valuing Restricted Securities: What Factors Do the Courts and the Service Look For," Journal of Taxation, September 1979, pp. 150-54) of fifteen cases indicated a mean discount of 37.4%. A similar study by Phillip Moore (Phillip W. Moore, "Valuation Revisited," Trusts & Estates, February 1987, pp. 40-52), which analyzed fourteen cases by the U.S. Tax Court from 1969 through 1982, indicated wide variations in the decisions but with a trend toward allowing higher discounts.

In "Estate of Berg" (61 TCM 1991-279), the Tax Court relied upon an expert's analysis of specific factors that influenced the magnitude of a minority interest discount (20%) and a market-

---

1 Citations and discussions of later decisions can be found in Michael Gregory, *Discount for Lack of Marketability and the IRS* (Roseville, MN: Birch Grove Publishing, 2013)

ability discount (10%). The expert's specificity appeared to be persuasive to the court. Other experts in the Berg case were admonished by the court for presenting discount analyses that were "exceedingly general and lacking in specific analysis of the subject interest."

In "Estate of Jung" (101 TIC. No.28), the Tax Court allowed a 35% discount for lack of marketability for a 21% interest in Jung Corp., a manufacturer and distributor of elastic textile goods. Jung's revenues ($68 million) and profits ($3.1 million) had been growing for several years, a dividend was being paid, and there was a reasonable knowledge that the company could be an attractive acquisition candidate. Of particular note is that the court relied upon several of the empirical studies cited above.

The various studies indicate that a marketability discount in the range of 35%-40% is near the mean. The court cases are increasingly referring to objective data, but the courts are asking for data and analysis that relate to the specific cases in question, not mere averages. It is important to note that the actual range of discounts can be very wide with the top end of the range at 70% or more, depending upon the features and circumstances of the subject company.