

# Review: Discount for Lack of Marketability Guide and Toolkit

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## Review: *Discount for Lack of Marketability Guide and Toolkit*

By Harold G. Martin Jr., Keiter (Richmond, Va., USA)

When valuing companies under the fair market value standard, many practitioners devote the majority of their report to explaining the valuation approach but then deduct a discount for lack of marketability (DLOM) that materially reduces value without providing adequate support. Such limited analysis of a DLOM is coming under increased scrutiny by the IRS as well as other users. The new *Discount for Lack of Marketability Guide* and the related *Toolkit* by Jim Hitchner, Jim Alerding, Josh Angell, and Kate Morris provides practitioners with the information and tools necessary to properly calculate and support a DLOM using both qualitative and quantitative methods.

The *DLOM Guide* is an excellent reference for both practitioners and users. It is a very detailed and well-documented text that includes a comprehensive discussion of the current theory, empirical studies, databases, and methods used to determine DLOMs.

The *DLOM Guide* presents the following qualitative, quantitative, and other types of methodologies used to determine DLOMs:

- *Qualitative methods:*
  - Legacy and more recent restricted stock studies;
  - Legacy pre-IPO benchmark studies;
  - *Mandelbaum* factors;

- Acquisition method; and
- *IRS DLOM Job Aid* factors.
- *Quantitative methods:*
  - FMV Opinions restricted stock database;
  - Pluris restricted stock database;
  - Valuation Advisors pre-IPO database; and
  - Option pricing models, including Black-Scholes/Chaffe, Longstaff, and Finnerty.
- *Shareholder cash flow adjustment models:*
  - Quantitative marketability miscount model (QMDM);
  - NERA CAPM; and
  - Nonmarketable investment company evaluation method (NICE).
- *Other models:*
  - The bid-ask spread method; and
  - Long-term equity anticipation securities (LEAPS).

The authors discuss the relative merits of each of the empirical studies, databases, and methods. Discussion of relevant landmark Tax Court cases dealing with DLOMs is also included. Most importantly, the IRS's perspective on the various methods used to determine DLOMs as presented in the *IRS DLOM Job Aid*

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is discussed. Finally, case studies illustrating the application of the different methodologies are included.

The related Toolkit includes 10 Excel files providing a new and transparent restricted stock model, alternative option models, and QMDM. In addition, the Toolkit includes a detailed user manual discussing the use and application of the various methodologies. Finally, the Toolkit provides sample language discussing the methodologies for inclusion in a valuation report.

The primary model in the Toolkit is the Restricted Stock Study Quintile Calculator (RSQC), which permits estimation of a DLOM for a subject company by adjusting restricted stock discount data for differences in volatility, holding period, dividends, and other factors. The source of the restricted stock discount data is the *FMV Opinions Restricted Stock Study – Discount for Lack of Marketability Database* (FMV Database), which must be separately purchased at [www.bvresources.com](http://www.bvresources.com). A representative example of the required inputs and the results the Toolkit produced using the RSQC model follows (see Exhibit 1).

The RSQC model matches the subject company to a quintile of restricted stocks from the FMV Database using criteria such as market value, revenues, profitability, etc. Sample output for the RSQC model using market value as the selected criteria is presented in Exhibit 2.

The median DLOM of the selected quintile from the RSQC, the restricted stock study equivalent discount (RSED), serves as a baseline estimate of the subject company's DLOM. The RSED provides a preliminary estimate of the DLOM for the subject company given its illiquidity, volatility, holding period, dividends, and other criteria. The RSED may be further adjusted for differences between the subject company and the selected quintile for certain criteria using a regression analysis of the FMV Database, option pricing models, and/or a *Mandelbaum* factor analysis. Sample output of the RSQC model using alternative

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**Exhibit 1. Restricted Stock Study Quintile Analysis: ABC Company Inc.**

		<a href="#">View Volatility Adjustment</a>	<a href="#">View Holding Period Adjustment</a>	<a href="#">View Dividend Adjustment</a>	<a href="#">View Factor Adjustment</a>	<a href="#">Unhide Detail</a>	<a href="#">Hide Detail</a>				
Model Inputs		Summary Output									
Subject Company Fundamentals (\$ in 000s)		User Inputs	Quintile	DLOM	Vol. Adj.	HP Adj.	Div Adj.	Fact. Adj.	Adj. DLOM	Weight	
Market Value of Equity (Marketable)		7,500.00	5th Quintile	25%	-6%	15%	na	10%	44%	2	<a href="#">View MV Quintile</a>
Total Revenues		20,000.00	3rd Quintile	14%	-4%	16%	na	10%	36%	1	<a href="#">View Rev Quintile</a>
Total Assets		5,000.00	5th Quintile	28%	-8%	14%	na	10%	44%	3	<a href="#">View Asset Quintile</a>
Book Value of Equity		4,500.00	4th Quintile	26%	-6%	15%	na	10%	45%	2	<a href="#">View Equity Quintile</a>
Market to Book Ratio		1.70	4th Quintile	14%	-3%	17%	na	10%	38%	1	<a href="#">View MTB Quintile</a>
Net Profit Margin (After-Tax)		6.00%	1st Quintile	11%	-1%	17%	na	10%	38%	1	<a href="#">View Margin Quintile</a>
Volatility		50%	5th Quintile	10%	2%	17%	na	10%	39%	3	<a href="#">View Vol Quintile</a>
Valuation Adjustments and Assumptions		Calculation of Median/Average/Wgt. Avg. DLOM									
Select Type of Volatility Adjustment Model		Regression	Median	14%	-4%	16%	na	10%	39%		
Select Type of Holding Period Adjustment Model		Finnerty	Average	18%	-4%	16%	na	10%	41%		
Select Type of Dividend Yield Adjustment Model		None	Wgt Avg.	20%	-4%	16%	na	10%	41%		
Expected Holding Period (Years)		7.5	Other Salient Statistics								
C Corp Equivalent Dividend Yield (%)		0.00%	Minimum	10%	-8%	14%	na	10%	36%		
What is your adjustment for other factors (%)?		10.00%	25th %Tile	13%	-6%	15%	na	10%	38%		
Apply registration rights adjustment?		Yes	50th %Tile	14%	-4%	16%	na	10%	39%		
Apply autocorrect option?		Yes	75th %Tile	26%	-2%	17%	na	10%	44%		
Select Weighting Method		FMV	90th %Tile	27%	0%	17%	na	10%	44%		
			Maximum	28%	2%	17%	na	10%	45%		
			StDev	8%	3%	1%	na	0%	4%		
			Coef of Var.	0.41	-0.95	0.07	na	0.00	0.09		

**Exhibit 2. Market Value of Equity Quintiles Analysis**

**Table 1.0**

Quintile	Count	Market Value of Equity Range (\$000s)			Median DLOM	Subject Company Value (\$000s)	Indicated Discount	
		High	Median	Low				
1st Quintile	138	\$8,430,007	\$535,672	\$298,615	11.2%	-	-	Not Selected
2nd Quintile	138	\$296,985	\$224,379	\$166,248	12.2%	-	-	Not Selected
3rd Quintile	138	\$166,154	\$121,995	\$88,761	19.8%	-	-	Not Selected
4th Quintile	138	\$88,388	\$62,106	\$43,476	19.9%	-	-	Not Selected
5th Quintile	139	\$42,802	\$25,671	\$2,832	25.0%	\$7,500	25.0%	Selected Quintile

**Table 2.0**

Quintile	Count	% of Median Volatility	% of Average Holding Period (Yrs)	% of Companies Trading OTC or Other	% of Companies With Negative Profit	% of Companies with Dividends	% of Companies with Registration Rights	
2nd Quintile	138	69.1%	1.24	58%	63%	9%	41%	Not Selected
3rd Quintile	138	77.2%	1.26	57%	69%	8%	47%	Not Selected
4th Quintile	138	81.4%	1.30	64%	72%	2%	45%	Not Selected
5th Quintile	139	88.8%	1.33	75%	67%	4%	29%	Selected Quintile

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**Exhibit 3. Sample Output of the RSQC Model Using Alternative Option Models**

Required User Inputs		VFC				
		Ghaidarov	Finnerty	Regression	Chaffe	Longstaff
Include Model in User-Selected Models	Yes	Yes	Yes	No	No	
Selected Average, Median, or Wgt. Avg.	Wgt Avg					
Weight to Apply for Wgt. Average Calculation	1	1	1	0	0	

Summary of Volatility Adjustment by Model					
Metric	Ghaidarov	Finnerty	Regression	Chaffe	VFC Longstaff
Market Value of Equity (Marketable)	-9%	-8%	-6%	-15%	-16%
Total Revenues	-5%	-4%	-4%	-8%	-10%
Total Assets	-14%	-11%	-8%	-21%	-22%
Book Value of Equity	-9%	-7%	-6%	-13%	-15%
Market to Book Ratio	-4%	-3%	-3%	-6%	-8%
Net Profit Margin (After-Tax)	-1%	-1%	-1%	-1%	-2%
Volatility	2%	2%	2%	4%	6%

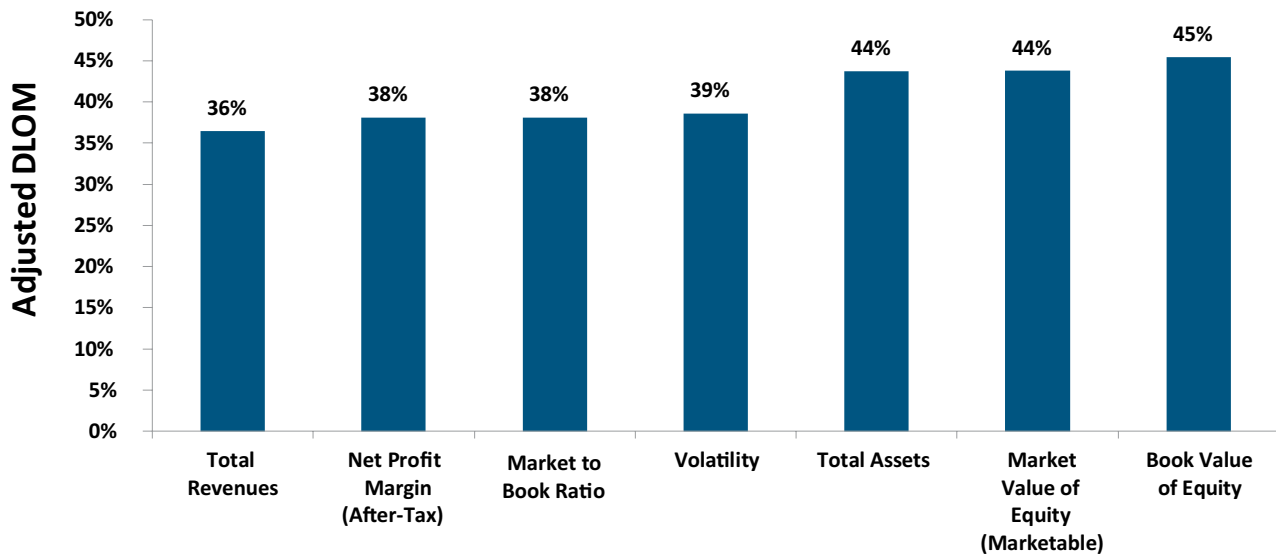
  

Summary		
Median	Average	User
-9%	-11%	-8%
-5%	-6%	-4%
-14%	-15%	-11%
-9%	-10%	-7%
-4%	-5%	-3%
-1%	-1%	-1%
2%	3%	2%

Models for Adjusting Volatility															
Fundamental Metric	Ghaidarov Option Model			Finnerty Option Model			Regression Model			Chaffe Option Model			VFC Longstaff Option Model		
	DLOM w/ Quint. Vol	DLOM w/ Subject Vol	Diff in DLOMs	DLOM w/ Quint. Vol	DLOM w/ Subject Vol	Diff in DLOMs	DLOM w/ Quint. Vol	DLOM w/ Subject Vol	Diff in DLOMs	DLOM w/ Quint. Vol	DLOM w/ Subject Vol	Diff in DLOMs	DLOM w/ Quint. Vol	DLOM w/ Subject Vol	Diff in DLOMs
Market Value of Equity (Marketable)	21%	12%	-9%	19%	11%	-8%	19%	13%	-6%	34%	20%	-15%	48%	32%	-16%
Total Revenues	16%	11%	-5%	15%	10%	-4%	17%	13%	-4%	26%	18%	-8%	40%	30%	-10%
Total Assets	26%	12%	-14%	22%	12%	-11%	21%	13%	-8%	41%	21%	-21%	55%	33%	-22%
Book Value of Equity	20%	11%	-9%	18%	11%	-7%	19%	13%	-6%	33%	19%	-13%	47%	32%	-15%
Market to Book Ratio	13%	10%	-4%	13%	9%	-3%	16%	13%	-3%	23%	16%	-6%	35%	28%	-8%
Net Profit Margin (After-Tax)	10%	9%	-1%	9%	9%	-1%	14%	13%	-1%	16%	15%	-1%	27%	26%	-2%
Volatility	7%	10%	2%	7%	9%	2%	11%	13%	2%	13%	16%	4%	22%	27%	6%

**Exhibit 4. FMV Opinions Quintiles Analysis Adjusted DLOMs**



option models to estimate an adjustment for volatility is in Exhibit 3.

The adjustments the RSQC model calculated may then be used to adjust the RSED DLOM to a DLOM specific to the subject company. The

RSQC model produces a graph presenting the adjusted DLOMs by subject company characteristic (see Exhibit 4).

**Summary.** I had the privilege of serving as a technical reviewer of the *DLOM Guide* and

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highly recommend this new resource for those practitioners who perform valuations for estate, gift, and income tax purposes, as well as for other purposes requiring the estimation of DLOMs.

*Discount for Lack of Marketability Guide*, James R. Hitchner, R. James Alerding, Joshua B. Angell, and Katherine E. Morris. Valuation Products and Services LLC, 2017. Available from Valuation Products and Services, Ventnor Professional Campus, 6601 Ventnor Ave., Suite 101, Ventnor

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