

Guide for Using the VFC DLOM Calculator®

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Guide for Using the VFC DLOM Calculator®

Preface

The VFC DLOM Calculator[®] provides DLOM estimates using the Longstaff, Black-Scholes, and Finnerty option formulas applied to weighted probabilities of price volatility and time periods of illiquidity. The calculated DLOMs represent the full range of likely outcomes based on the probability weightings.

Systematic price risk can be benchmarked on guideline company price data. Once a user has selected one or more guideline companies and specified a price reference time period, the VFC DLOM Calculator[®] calculates price risk probabilities using daily price data obtained from NASDAQ and AlphaVantage. Alternatively, price volatility assumptions consisting of an average and a standard deviation of price volatility can be provided by the user.

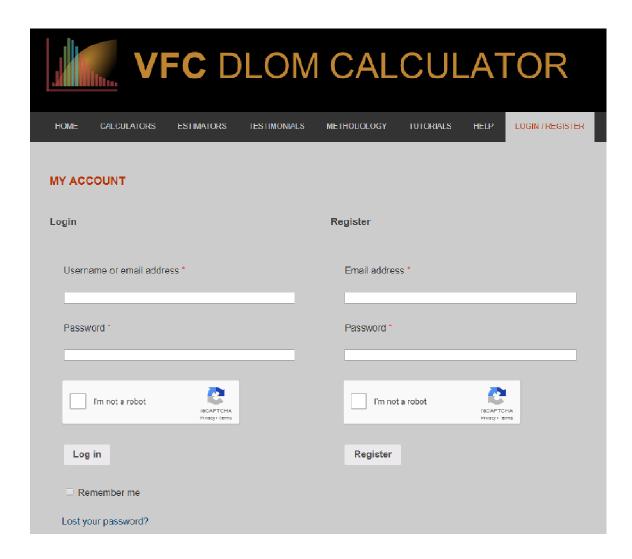
For most businesses and securities that are not publicly traded, the time required to market the investment represents the period of illiquidity. Marketing period probabilities for privately held businesses can be observed in the transactions reported in the BIZCOMPS[®] and Pratt's Stats[®] databases and in the approval times required to process public offerings through the SEC. The VFC DLOM Calculator[®] maintains a database of BIZCOMPS[®] transactions that users can access for private company marketing period estimation. The VFC DLOM Calculator[®] also maintains a proprietary database of SEC Form S-1 filings from which SEC processing times are calculated. Users can access this database for public offering processing time estimation. Alternatively, users can develop their own time period probability assumptions using their BIZCOMPS[®] or Pratt's Stats[®] subscriptions or from other sources. Such user-provided probability assumptions consist of an average and a standard deviation of time periods.

To calculate probability-based DLOM, the price volatility and time period data are divided into segments based on the standard log-normal distribution that results from the assumptions of average and standard deviation developed from the specified guideline companies and private sale transactions. A combined probability distribution is then developed that represents the range of probability combinations of price and time occurrences. The VFC DLOM Calculator[®] then calculates a DLOM for each combination of price volatility and time using the option formula chosen by the user. The currently available option formulas are Longstaff, Black-Scholes, and Finnerty. The DLOMs are next multiplied by the probability associated with each combination of marketing period and price volatility to produce a probability weighted DLOM. These probabilities are re-weighted so that the total probability is 100%. The probability weighted DLOMs for all the marketing period and price volatility combinations are summed to produce a double probability weighted DLOM for the asset.

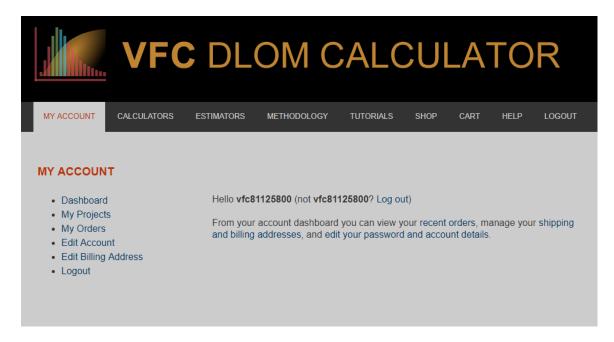
Single probability DLOMs will be calculated if the user chooses to use probability for only one of marketing period or price volatility. A single probability DLOM would be appropriate in circumstances in which a fixed time period of liquidity is known or determinable but the asset price remains volatile, or if an asset price is constant over a marketing time period that is variable. For example, a security may have a restriction on sale that, upon expiration, allows the immediate sale to a buyer at the then market price. Or the price of an asset may be fixed contractually while being offered for sale but still requires an unknown amount of time to consummate a sale. In such circumstances, the DLOM will be calculated and probability weighted for whichever variable is using the probability distribution. The other variable will remain will be fixed at the user-entered value for the DLOM calculation for each segment. The results are summed up to get the single probability weighted DLOM for the asset.

Registration

Enter your email address, password, complete the captcha and click "Register." Registration is free.



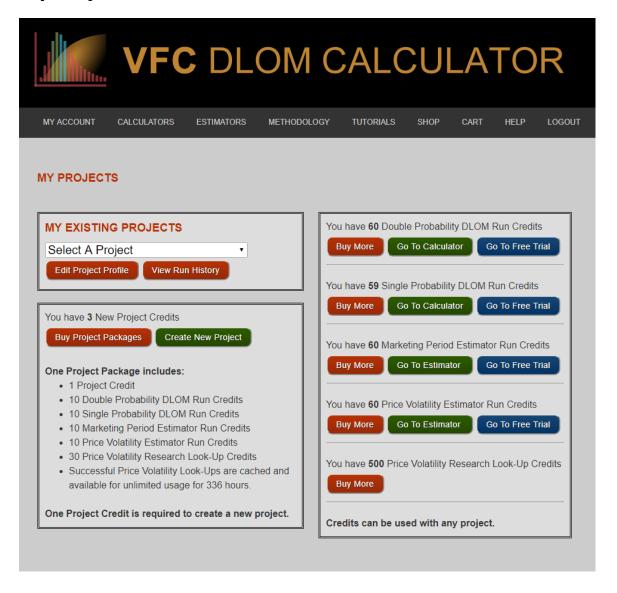
My Account



On this page you can manage your account or log out. The following navigation options are available:

- Dashboard
 - The current page.
- My Projects
 - You can manage your Projects from this page.
 - You may also access this page by hovering your mouse over the "My Account" panel in the navigation bar.
- My Orders
 - You can view your order history and receipts at this page.
- Edit Account
 - You can change your first name, last name, display name, email address, and password at this page.
- Edit Billing Address
 - You can modify your billing address at this page.

My Projects



To use the complete version of any of the Calculators and Estimators you must have both a Project and specific credits for the calculations you want to conduct. From this page you can navigate to any of the Calculators, Estimators and their respective free trials. Use the links labeled "Buy More" to navigate to the Shop page to add credits to your cart.

You can view and edit any of your Projects by selecting them from the dropdown located in the "My Existing Projects" box. You can then edit Project information by

clicking the corresponding "Edit Project Profile" button. To view all of the prior calculations performed and saved for a Project, click "View Run History."

Creating a New Project

On the My Projects page, you may click "Create New Project" to navigate to a page where you can fill in a form describing your subject and appraiser Profiles.

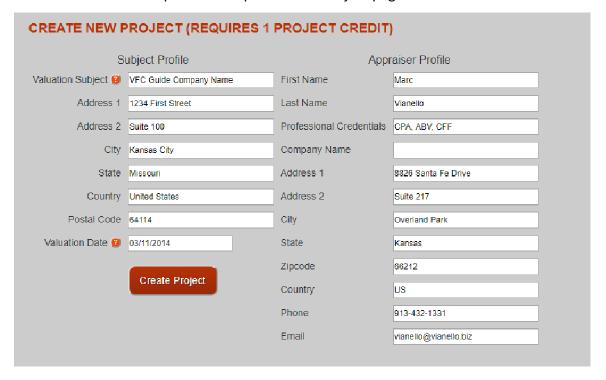
CREATE NEW PROJECT (REQUIRES 1 PROJECT CREDIT)			
Su	ubject Profile	Appr	aiser Profile
Valuation Subject 🚱		First Name	
Address 1		Last Name	
Address 2		Professional Credentials	
City		Company Name	
State		Address 1	
Country		Address 2	
Postal Code		City	
Valuation Date 🥝		State	
		Zipcode	
	Create Project	Country	
		Phone	
		Email	

The "Subject Profile" corresponds to the information of a company or other asset being evaluated. The "Appraiser Profile" corresponds to the appraiser conducting the evaluation. The "Valuation Subject" and "Valuation Date" are required and can only be set once, **they cannot be changed after a Project is created**. All other details may be edited. This profile information will be displayed along with your calculation results, and in any report that you print.

The "Valuation Date" is particularly important for the Price Volatility tool. If you want to use a custom price volatility period, you will be limited to 180 days before and after the valuation date, as shown below:



Here is an example of a completed New Project page:



The screenshot below corresponds to the aspects of your Project to be displayed when your results are calculated.



The next screenshot demonstrates the aspects of your Project to be displayed on the first page of every report that you print.



DOUBLE PROBABILITY DLOM

Based on Marketing Period and Price Volatility Probabilities Valuation Date: 03/11/2014 For: VFC Guide Company Name

DOUBLE PROBABILITY DISCOUNT FOR LACK OF MARKETABILITY Based on Marketing Period and Price Volatility Probabilities

Appraiser

Marc Vianello CPA, ABV, CFF

8826 Santa Fe Drive Suite 217, Overland Park, Kansas US 913-432-1331 vianello@vianello.biz

Valuation Subject

VFC Guide Company Name 1234 First Street Suite 100 Kansas City, Missouri 64114 United States

Valuation Date

03 / 11 / 2014

Report Date

03 / 12 / 2019

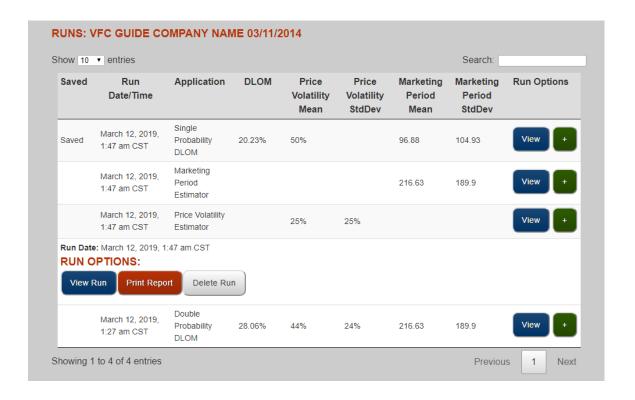
Updating Projects

PROJECT: VFC GUIDE COMPANY NAME 03/11/2014					
Select a calculator or estimator to work with this project					
S	ubject Profile	Аррі	raiser Profile		
Valuation Subject 🥝	VFC Guide Company Name	First Name	Marc		
Address 1	2234 First Street	Last Name	Vianello		
Address 2	Suite 100	Professional Credentials	CPA, ABV, CFF		
City	Kansas City	Company Name			
State	Missouri	Address 1	8826 Santa Fe Drive		
Country	United States	Address 2	Suite 217		
Postal Code	64114	City	Overland Park		
Valuation Date 2	03/11/2014	State	Kansas		
		Zipcode	66212		
	Update Project	Country	US		
	Delete Project	Phone	913-432-1331		
		Email	vianello@vianello.biz		

You can change any aspect of the Profiles, except for the "Valuation Subject" and "Valuation Date" by selecting a Project from the dropdown on the "My Projects" page, and clicking "edit Project Profile." After you have made your changes, click "Update Project." If for any reason you wish to delete your Project you may click "Delete Project" and confirm the prompt. Be aware that if you delete a Project, all Runs and associated data will be lost and unrecoverable.

Viewing Project Runs

Anytime you initiate a calculation on a Calculator or Estimator, you are executing a "Run." The information generated from the Run is automatically stored for later viewing. On the "My Projects" page, after selecting a Project from the dropdown, click "View Run History" view all Runs associated with the Project.



The Runs table displays all of the archived Runs for a Project. If you want to view the full results of a specific Run, click the blue "View" button that appears on the right side of each row. If you click the green "+" button to the right of the "View" button, you will be given more options. Mobile users may tap the row itself to view these options. Clicking the "View Run" button also allows you to view the full results.

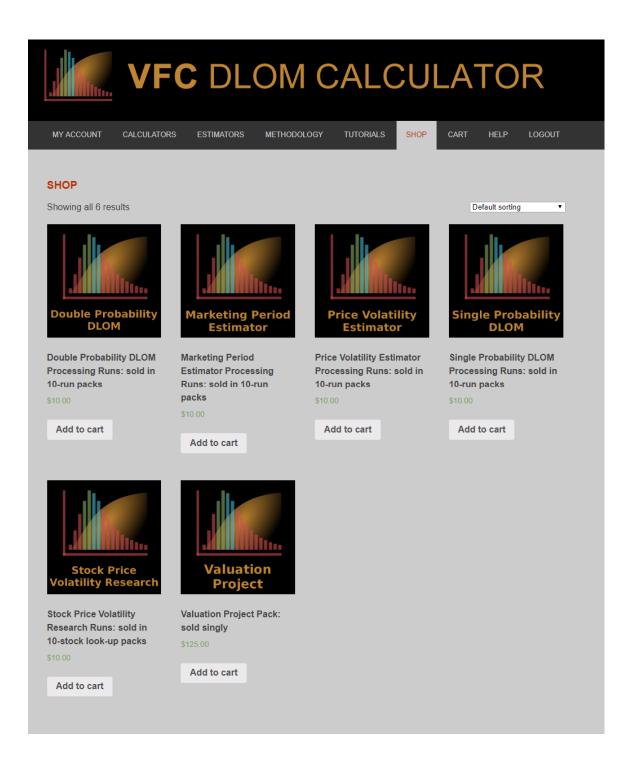
The "Print Report" button will show the PDF report results associated with any particular Run.

The "Delete Run" button will allow you to delete the Run from the archive. After a Run is deleted, it cannot be recovered. If you want to hide these options, you may click the same green "+" button to do so.

All Runs can be "Saved" on their full results page. Run views can be limited to only the "Saved" Runs by typing "Saved" into the search box in the top right corner. The search box can also be used with other text queries to view only Runs that satisfy the query.

Purchasing Credits

Navigate to the Shop page by clicking the "Shop" panel in the horizontal navigation bar.



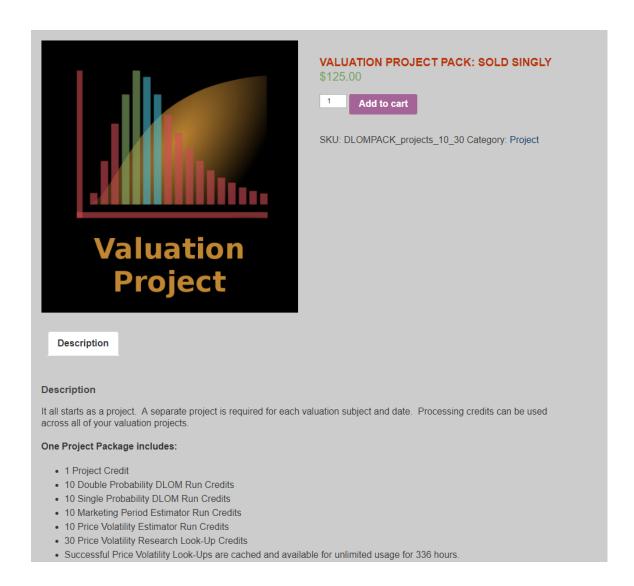
In the shop you can buy Run credits for the Calculators and Estimators, buy Look-Up credits for Price Volatility Research, and buy Valuation Project Packs. A Valuation Project Pack is a complete use package that contains multiple Run credits, multiple Look-Up credits and a Project credit. Credits are global, meaning that any Run credits or Look-Up credit can be applied to any Project that you have created.

One Project Package includes:

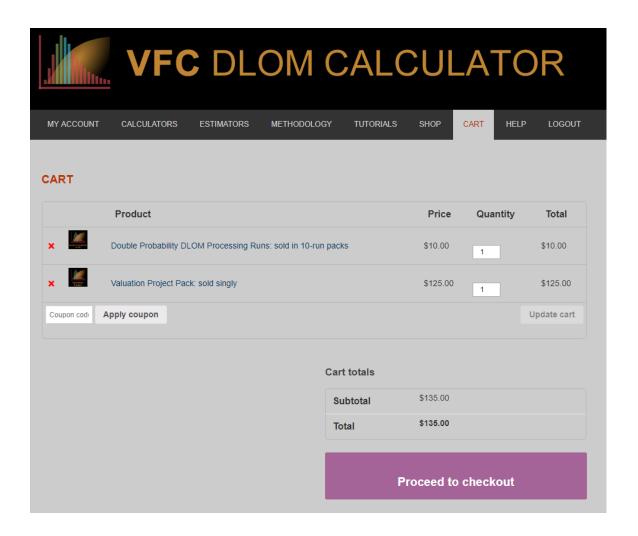
- 1 Project Credit
- 10 Double Probability DLOM Run Credits
- 10 Single Probability DLOM Run Credits
- 10 Marketing Period Estimator Run Credits
- 10 Price Volatility Estimator Run Credits
- 30 Price Volatility Research Look-Up Credits

Successful Price Volatility Look-Ups are cached and available for unlimited usage for 336 hours.

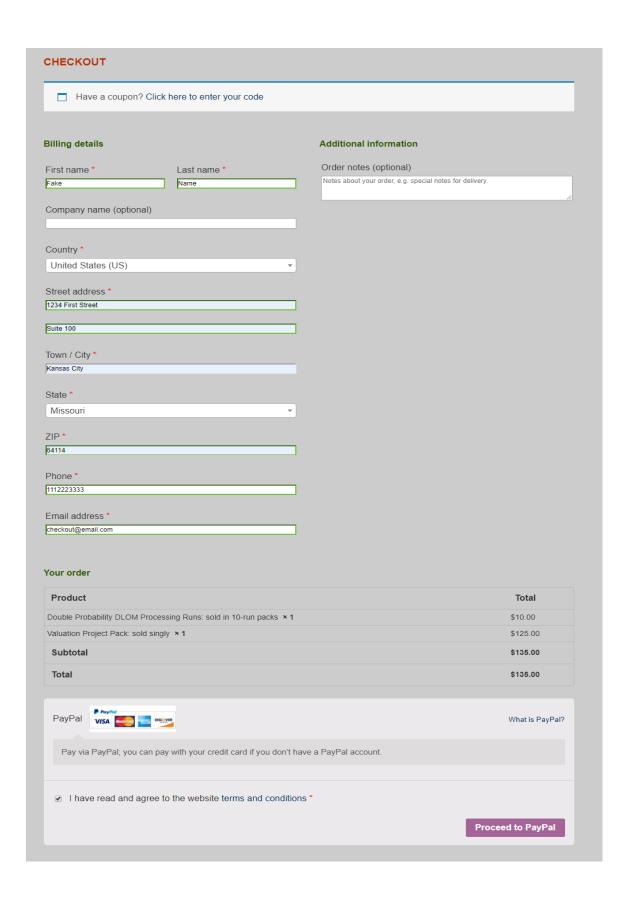
Click a product image on the Shop page to get more information about the particular product. Click the "Add to cart" button to add products your shopping cart.



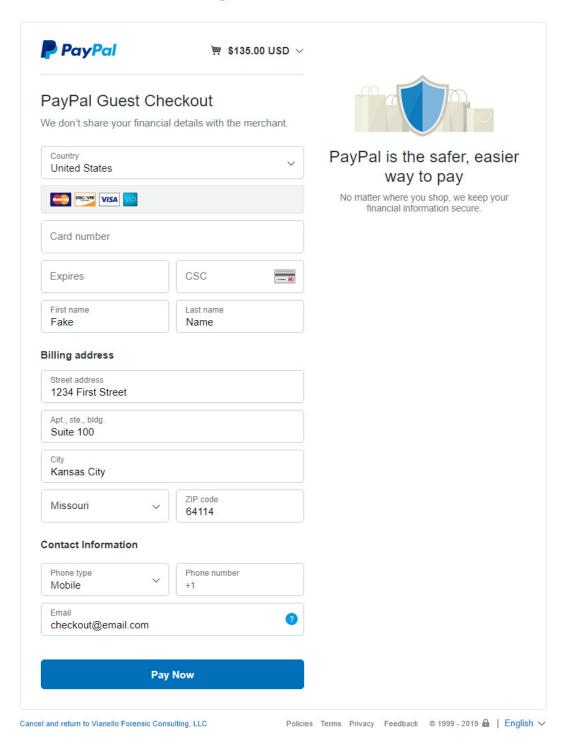
To view your shopping cart, click the "Cart" panel in the horizontal navigation bar. On this page you can remove items from your Cart, apply coupon codes, and to set the quantity of items you wish to purchase. Once you are ready to purchase click the "Proceed to checkout" button.



On the checkout page you need to fill in your billing information and check the box signifying that you have read the Terms and Conditions. Click the "Proceed to PayPal" button when you are ready to pay. Once you have completed entering your information and click the "Pay Now" button, credits will be immediately available for use on any of your Projects, assuming no transaction failures. You can check your "My Projects" page to confirm that your purchased credits were properly added to your account. You can also access your receipts by navigating to the "My Account" page and clicking "My Orders."



Vianello Forensic Consulting, LLC



Using DLOM Calculators and Estimators

Types of Calculators and Estimators

There are two Calculators and two Estimators available to users. Each Calculator and Estimator requires a payment using a Run credit. Each DLOM Calculator and Estimator serves a unique purpose while utilizing a common set of tools. A variable marketing period requires a mean and standard deviation, while a static marketing period requires just a mean. Variable price volatility requires a mean and standard deviation, while static price volatility requires just a mean. VFC DLOM Calculator provides specialized tools to generate marketing period and price volatility means and standard deviations for calculating DLOMs and estimating parameters. This guide will first explain the common set of tools used by the Calculators and Estimators, and how to use them. Afterwards, this guide will explain what tool each Calculator and Estimator uses, and what results will be provided from a single Run.

Calculators

- Double Probability DLOM Calculator
 - This Calculator utilizes both the Marketing Period Input and Price
 Volatility tools to get two sets of mean and standard deviations to
 calculate a double probability DLOM.
- Single Probability DLOM Calculator
 - This Calculator has two modes both of which are accessible on the same
 Calculator page.
 - Static Marketing Period with a Price Volatility mean and standard deviation to calculate a single probability DLOM
 - Static Price Volatility with a Marketing Period mean and standard deviation to calculate a single probability DLOM

Estimators

- Marketing Period Estimator
 - Uses only the Marketing Period Tools

- Price Volatility Estimator
 - Uses only the Price Volatility Tools

Single Probability DLOM Calculator Static Tools

This Calculator has two modes both, which are accessible on the same Calculator page. You can select the "Method" to set the mode of the Calculator.

Method Use Variable Marketing Period with Fixed Price Volatility Use Variable Price Volatility with Fixed Marketing Period

The "Use Variable Marketing Period with Fixed Price Volatility" option allows users to (a) use the Marketing Period Input tool to generate marketing period values, and (b) input a number that represents the average Price Volatility.

Method	
Use Variable	le Marketing Period with Fixed Price Volatility
O Use Variabl	le Price Volatility with Fixed Marketing Period
Marketing F	Period Inputs 🥝
O Private Co	mpanies 2
Successfu	l Public Offerings 🥝
O Process B	IZCOMPS® or Pratt's Stats® Selection 🥝
O Provide Yo	our Own Time Factors 🥝
Price Volatil	itv
	ity
%	

The "Use Variable Price Volatility with Fixed Marketing Period" option allows users to (a) use the Price Volatility tool to generate price volatility values, and (b) input a number that represents the number of marketing days.

Method	
	ng Period with Fixed Price Volatility 2
Price Volatility Input	s 🥝
Use Publicly Traded Some Provide Your Own Provide Your Ow	Stocks or Indexes to Determine Price Volatility ice Volatility Factors
Marketing Period	
	Days

Probability-Based Marketing Periods

This tool allows users to generate a marketing period mean and standard deviation. Credits are not required to use this tool.



Private Companies

- This choice bases marketing period estimates on BIZCOMPS® transactions comprising the VFC DLOM Calculator® private company database. There are over 16,000 transactions in our database.
- Successful Public Offerings
 - This choice bases marketing period estimates on benchmarks selected from the SEC filings comprising the VFC DLOM Calculator® successful

public offering database. There are over 10,000 SEC filings in our database.

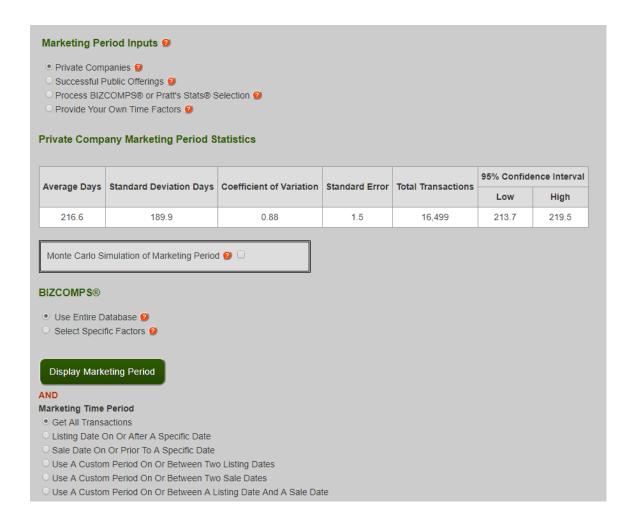
- Process BIZCOMPS® or Stout (formerly Pratt's Stats®) Selection
 - This choice bases marketing period estimates on specific transactions that you select using your BIZCOMPS® or Stout subscription, and upload to the VFC DLOM Calculator®.
- Provide Your Own Time Factors
 - This choice bases marketing period estimates on a marketing period mean and standard distribution that you have developed from other sources.

Private Companies

This choice bases marketing period estimates on the averages of all or subsets of the BIZCOMPS® transactions comprising the VFC DLOM Calculator® private company database. To view the mean and standard deviation your selection generates, click the "Display Marketing Period" button.

Use Entire Database

This choice utilizes the entire set of BIZCOMPS® transactions in our database, as shown in the screenshot below.



Select Specific Factors

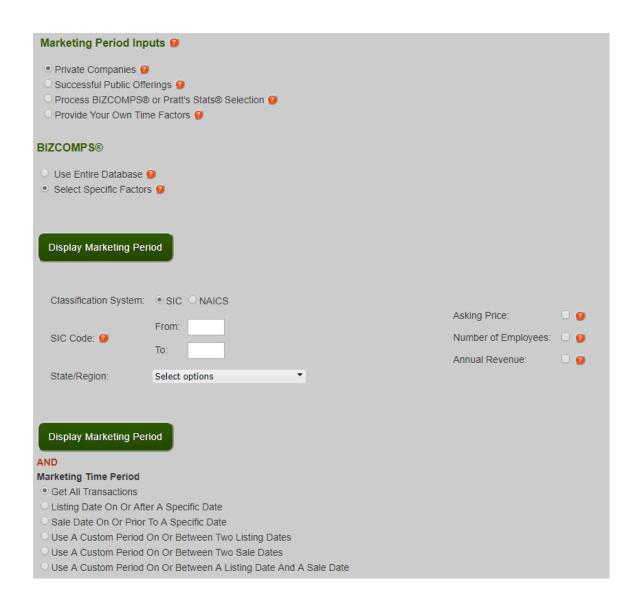
These factors represent data determined by BIZCOMPS®. To learn more visit http://bizcomps.com/.

- Industry Classification (SIC/NAICS)
 - You can set a range between two SIC or NAICS numbers representing specific business industries. Only one range can be used at a time. All SICs are 4 digits and all NAICS are 6 digits. Industries can be defined broadly (using as few as 1 digit), or narrowly (using all of the available digits). The "From" option is the lower bound while the "To" option is the upper bound. If an input has insufficient digits then in the "From" option "0"s will be automatically appended. In the "To" option "9"s will

be automatically appended if fewer than all digits are used in the industry range definition.

State/Region

- This factor allows you to set one or multiple geographic locations as a parameter. The locations are as reported by BIZCOMPS®.
- Slider Factors. These factors utilize a slider bar representing a range of values allowed for the factor. The slider does not appear unless the factor is checked; if unchecked the slider will disappear.
 - Asking Price. This factor corresponds to the "ASK PRICE" field in BIZCOMPS®.
 - Annual Gross. This factor corresponds to the "ANN GROSS" field in BIZCOMPS®.
 - Number of Employees. This factor corresponds to the "# of EMPL" field in BIZCOMPS®. BIZCOMPS® reports the number of both full time and part time employees is given, for simplicity these numbers are summed for a total number of employees. We are not able to convert the BIZCOMPS® information to full-time equivalent employee counts.



Statistics Table

There are statistics associated with the marketing period factors that you select. The marketing period statistics are: average number of days on the market; the standard deviation of the number of days on the market; the coefficient of variation of the number of days on the market; the standard error of the defined population; the transaction count of the defined population; and the 95% confidence interval for the defined population.

Using Multiple Factors

If you use only a single factor, then you will be given only one standard deviation and average. However, if you use multiple factors you will be given the opportunity to use different methods to generate an ultimate standard deviation and average.

- Weighted Average of Factors.
 - This option is selected by default.
 - This choice bases your marketing period conclusion on the weighted average mean and standard deviation of marketing period days for the defined populations of private sale transactions. Each transaction possesses at least one of the characteristics that you selected.
 Transactions possessing more than one characteristic are counted in each defined sub-population. This choice results in the broadest measure mean and standard deviation.

Average of Unique Transactions

This choice bases your marketing period conclusion on the simple average mean and standard deviation of marketing period days for the <u>unique</u> private sale transactions. Each transaction possesses at least one of the characteristics that you selected, but each transaction is considered only once. This choice results in a more restrictive measure of mean and standard deviation than the weighted average choice.

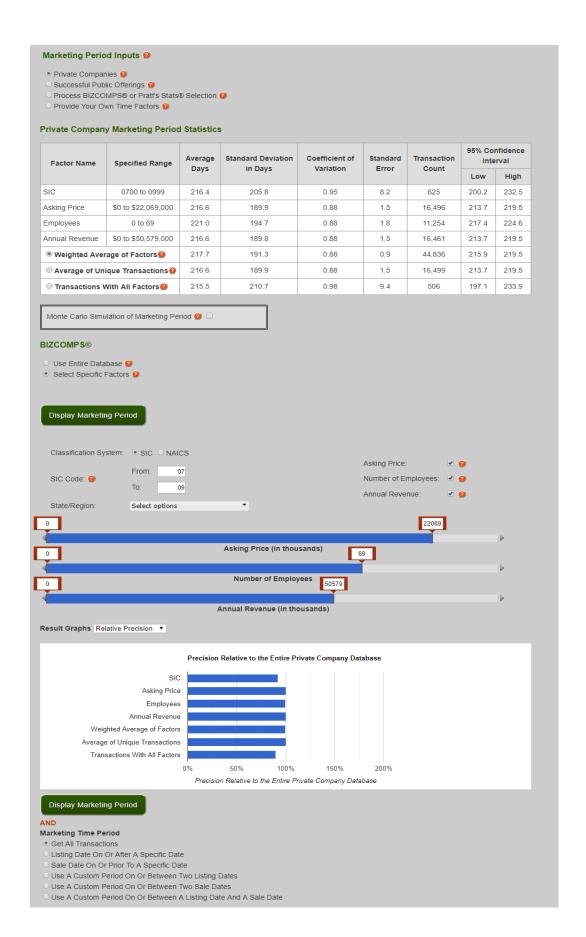
Transactions With All Factors

 This choice bases your marketing period conclusion on the simple average mean and standard deviation of marketing period days for the private sale transactions with <u>all</u> the characteristics that you selected.
 This choice results in the most restrictive measure of mean and standard deviation.

Results Graphs

You can view graphs that display information about your one or more factors to allow visual comparison of the differences between them.

- Relative Precision
- Mean
- Standard Deviation
- Datapoint Count
- Standard Error



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Defining Private Company Marketing Periods

Defining a time period allows you to further refine the selection of BIZCOMPS® transactions for calculating time period means and standard deviations. This can be done using either Sale Dates or Listing Dates. BIZCOMPS® provides a Sale Date with its transaction data, but does not provide a Listing Date. Nevertheless, the VFC DLOM Calculator® generates Listing Dates by subtracting the number of "DAYS ON MKT" provided in BIZCOMPS® spreadsheets from the Sale Date. The oldest Sale Date in our database is 1/31/1986, and the latest is currently 7/13/2015. The oldest Listing Date is 8/4 /1985 and the latest is currently 6/13/2015. As more BIZCOMPS® transactions are added to our database, the latest Listing and Sale Dates will advance.

Marketing Time Period

- Get All Transactions
- Listing Date On Or After A Specific Date
- Sale Date On Or Prior To A Specific Date
- Use A Custom Period On Or Between Two Listing Dates
- Use A Custom Period On Or Between Two Sale Dates
- Use A Custom Period On Or Between A Listing Date And A Sale Date
- Get All Transactions.
 - This selection uses all available transactions with the selection factors that you defined.
- Listing Date On or After a Specific Date.
 - This selection uses all available transactions with the selection factors
 that you defined that were listed on or after the Listing Date you specify.
- Sale Date On or Prior to a Specific Date.
 - This selection uses all available transactions with the selection factors that you defined that sold on or before the Sale Date you specify.
- Use a Custom Period On or Between Two Listing Dates.

- This selection uses all available transactions with the selection factors that you defined that were listed on or between the Listing Dates you specify.
- Use a Custom Period On or Between Two Sale Dates.
 - This selection uses all available transactions with the selection factors that you defined that were sold on or between the Sale Dates you specify.
- Use a Custom Period On or Between a Listing Date and a Sale Date.
 - This selection uses all available transactions with the selection factors that you defined that were listed on or after the Listing Date that you specify and were sold on or before the Sale Date that you specify.

Defining Successful Public Offering Periods

This option provides you a selection from three different transaction types for estimating marketing periods for larger businesses—those suitable for a public equity offerings—and other types of publicly registered securities. The types of transactions are:

- Equity
- Notes
- Mixed Securities

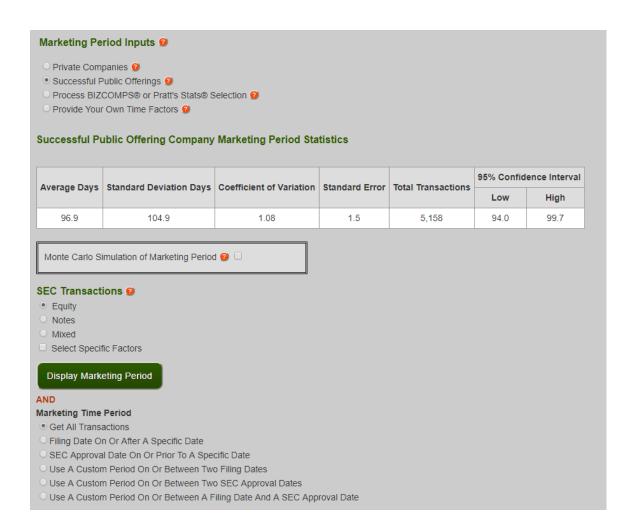
Once a transaction type has been selected you may further refine you analysis by specifying a specific SIC Code or a range of codes. SIC Code and transaction dates, or ranges thereof, are the only transaction parameters available for estimating Public Offering time periods.

If no SIC Code or range is specified, the VFC DLOM Calculator® will use all of the transactions in the database that satisfy your specified date parameters to calculate the Marketing Period mean and standard deviation. Similarly, f no date or date range is specified, the VFC DLOM Calculator® will use all of the transactions in the database that

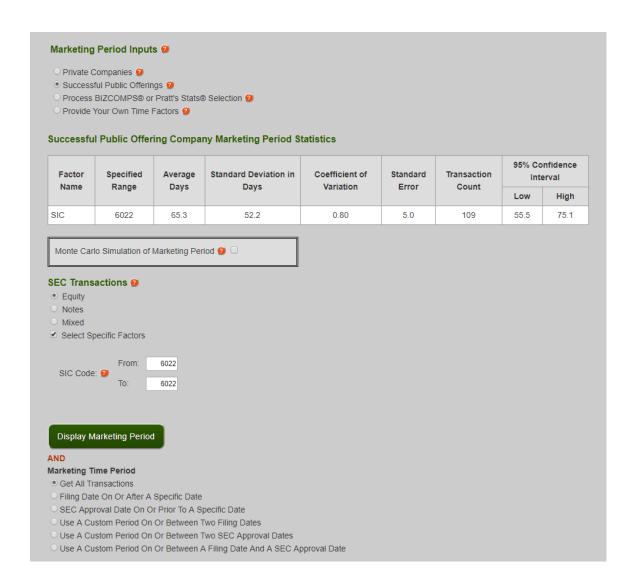
satisfy your specified SIC Code parameters to calculate the Marketing Period mean and standard deviation.

Marketing Period Inputs
O Private Companies 2
Successful Public Offerings
O Process BIZCOMPS® or Pratt's Stats® Selection 2
O Provide Your Own Time Factors 2
SEC Transactions 2
Equity
O Notes
O Mixed
✓ Select Specific Factors
SIC Code: 9 To:
Display Marketing Period AND
Marketing Time Period
Get All Transactions
Filing Date On Or After A Specific Date
SEC Approval Date On Or Prior To A Specific Date
Use A Custom Period On Or Between Two Filing Dates
Use A Custom Period On Or Between Two SEC Approval Dates
Use A Custom Period On Or Between A Filing Date And A SEC Approval Date

Click the "Display Marketing Period" button to view the calculation results. The screenshot below demonstrates the presentation.



As previously explained, you can select industry factors by entering SIC codes into the "From" and "To" fields shown in the screen shot below. Note that if a SIC Code has less than 4 digits it will automatically, append "0"s for "From" and "9"s for "To" in order to complete the range.



Successful Public Offerings Marketing Time Period

A marketing time period allows you to further refine the time frame for when SIC S-1 filings should be counted.

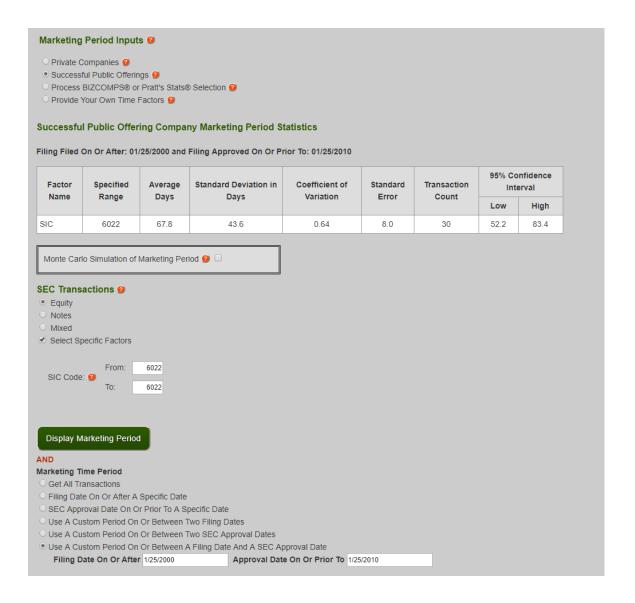
Marketing Time Period
Get All Transactions
O Filing Date On Or After A Specific Date
O SEC Approval Date On Or Prior To A Specific Date
Use A Custom Period On Or Between Two Filing Dates
Use A Custom Period On Or Between Two SEC Approval Dates
Use A Custom Period On Or Between A Filing Date And A SEC Approval Date

A "Filing Date" falls on the date in which a Form S-1 was filed to the SEC. A "SEC Approval Date" falls on the date on which a 424B1 or 424B4 was filed representing SEC approval. The Marketing Days then is represented in the number of days falling on and between the two filing dates. A mean and standard deviation is calculated based on the transactions that satisfy all selected requirements. The first Form S-1 filing found is dated 1994-01-07, and the currently latest filing is dated 2015-10-19. The first SEC approval is dated 1994-04-07 and the currently latest SEC approval is dated 2015-10-19. The VFC DLOM Calculator® is updated periodically to capture new Form A-1 filings and SEC approvals. All time periods are inclusive, meaning that they include the days on the "Filing Date" and "SEC Approval Date."

- Get All Transactions.
 - This selection uses all available transactions with the selection factors that you defined.
- Filing Date After a Specific Date.
 - This selection uses all available transactions with the selection factors that you defined for which a Form S-1 was filed on or after the Filing Date you specify.
- SEC Approval Date On or Prior to a Specific Date.
 - This selection uses all available transactions with the selection factors that you defined for which a Form 424B1 or 424B4 was approved on or before the SEC Approval Date you specify.
- Use A Custom Period On or Between Two Filing Dates.
 - This selection uses all available transactions with the selection factors that you defined for which a Form S-1 was filed on or between the Filing Dates you specify.
- Use A Custom Period On or Between Two SEC Approval Dates.
 - This selection uses all available transactions with the selection factors
 that you defined for which a 424B2 or 424B4 were filed on or between

the SEC Approval Dates you specify.

- Use A Custom Period On or Between a Filing Date and a SEC Approval Date.
 - O This selection uses all available transactions with the selection factors that you defined for which a Form S-1 was filed on or after the Filing Date that you specify and for which a Form 424B2 or 424B4 was filed on or before the SEC Approval Date that you specify.



Monte Carlo Simulation of Marketing Period

Monte Carlo simulation is available for the Marketing Periods of both Private Company transactions and Successful Public Offerings. It allows you to override the "Average Days" of the analytical population using any number within the 95% confidence interval. Standard deviations remain the same. After a Monte Carlo analysis is run, a fourth column titled "User Adjusted Average" will be displayed in the Run results to show the effects of the changed average.

Average Days	Standard Deviation Days	Coefficient of Variation	Standard Error	Total Transactions	95% Confidence Interval	
					Low	High
96.9	104.9	1.08	1.5	5,158	94.0	99.7

Processing BIZCOMPS® or Stout Transaction Selections

This option allows you to select a BIZCOMPS® or Stout spreadsheet file for use in calculating a marketing mean and standard deviation. You must have a BIZCOMPS® or Stout subscription to use this function. If you do not have a BIZCOMPS®, please click the blue button shown in the screenshot below to navigate to the BIXCOMPS® website.

Processed transactions are not retained by VFC DLOM Calculator. Be sure to save your file. Only XLSX, XLS, and CSV Files are valid. The maximum file size is 2MB (approximately 1000 rows). Please do not put line breaks (new lines) in your cells, as this may result in processing errors.

CSV Files

CSV files must have values delimited by a comma (,) and text values should be encapsulated with quotes (" ").

Header Row

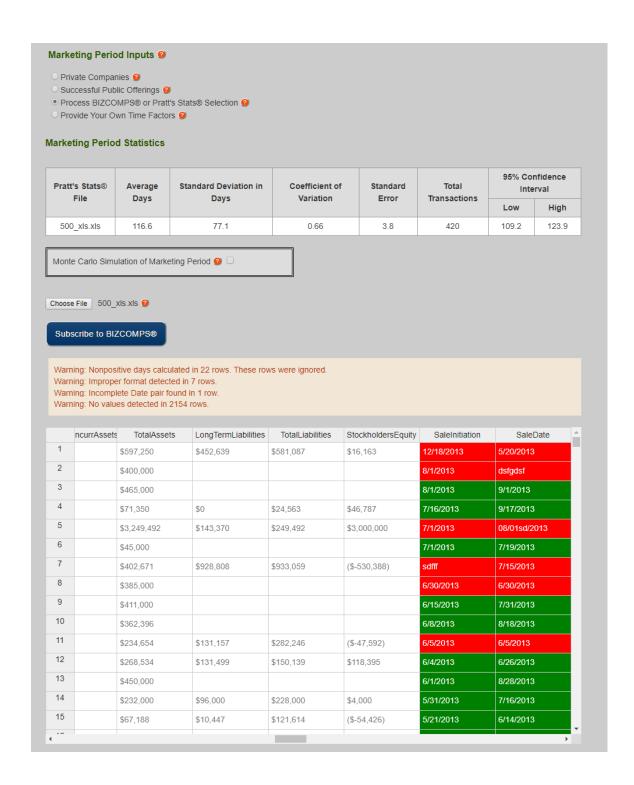
The header row should be included for BIZCOMPS® or Pratt's Stats® selections. For BIZCOMPS® the first row must have a cell with the contents "days on market." For Pratt's Stats® the first row must have two cells with one containing "Sale Initiation" and another containing "Sale Date." Once located, the entire column will be used for Marketing Period calculations.

The header cells are not case sensitive, "days on market" and "DAYS ON MARKET" are both valid.

Warnings

After the necessary columns are found, each row is processed individually. This processing checks for valid syntax. "Days on market" values must be a number, while "Sale Initiation" and "Sale Date" values must be dates in mm/dd/yyyy format.

If a "Sale Initiation" date occurs after a "Sale Date" it is considered invalid, otherwise the marketing period calculated for that row is the difference in days between "Sale Date" and "Sale Initiation."



Using Specified Time Factors

This option allows you to enter your own Marketing Period mean and standard deviation.

Marketing Period Inputs
 Private Companies Successful Public Offerings Process BIZCOMPS® or Pratt's Stats® Selection Provide Your Own Time Factors
Average Std Dev Your Marketing Period Factors Days

Probability-Based Price Volatilities

This tool is provided to generate a price volatility mean and standard deviation.



- Use Publicly Traded Stocks or Indexes to Determine Price Volatility
 - This choice bases price volatility estimates on user-specified stocks and indexes. The VFC DLOM Calculator® automatically calculates the price volatility characteristics of the specified stocks and indexes.
- Provide Your Own Price Volatility Factors
 - This choice bases price volatility estimates on a distribution (mean and standard deviation) that you developed from other sources.

Using Publicly Traded Stocks or Indexes to Determine Price Volatility

Using Price Volatility Guideline Companies and Indexes requires the use of "Look-up" credits. After price data is retrieved for a company's ticker, it is cached for 336 hours (2 weeks) and all subsequent Look-Ups that use the cache do not cost any "Look-up" credits. Users who want to view their cache can click the checkbox "View Cached Price Data." Users who want to clear a cache prior to its expiration can click the "Clear Cache" button next to the ticker symbol they want to clear.

Up to 10 ticker symbols can be used at once for stock price look-ups. The ticker symbols must be separated by commas AND/OR spaces. The "Overall" average value is determined by averaging all the guideline companies, each company is treated equally. Please note that some special characters such as ^ do not work with the "Look-up" function.

Price Data Source

There are two sources securities price sources available through the VFC DLOM Calculator®: Alpha Vantage and NASDAQ. Alpha Vantage provides both Adjusted Closing Prices and Reported Closing Prices. NASDAQ provides only Reported Closing Prices.

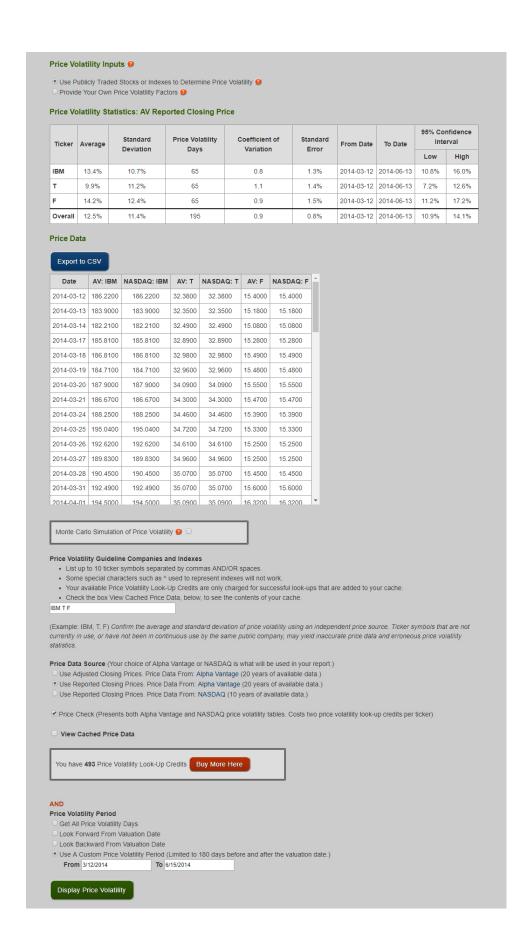
When "Reported Closing Prices" is selected, the VFC DLOM Calculator® allows you to do a "Price Check." This function allows comparison of the retrieved price data from NASDAQ and Alpha Vantage. Discrepancies are highlighted in red. If there are no numbers highlighted in red, then the NASDAQ and Alpha Vantage prices are identical, and the price data they report is more likely to be accurate. Users should review the reported prices if errors are detected in this test.

Price Volatility Period

This option represents the time period for which price data is gathered to calculate a price volatility mean and standard deviation. Keep in mind that price volatility days represent the number of trade days necessary to get the number of daily

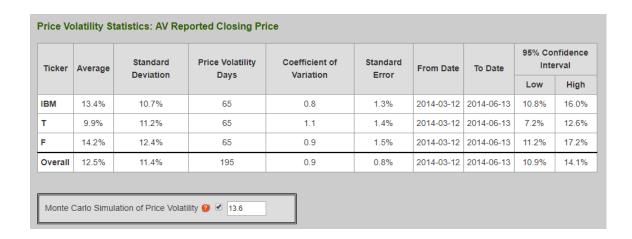
volatility metrics. That is, price volatility days equals trade days plus one. "Trade days" means the number of days with price data. Trade days do not correspond to actual calendar days. Available price volatility time parameters include:

- Get All Price Volatility Data
 - This retrieves all available price data for the tickers
- Look Forward From Valuation Date
 - This retrieves a user specified amount of price volatility days that occur after and on the valuation date
- Look Backward From Valuation Date
 - This retrieves a user specified amount of price volatility days that occur prior and on the valuation date
- Use a Custom Price Volatility Period
 - This allows a user to specify dates in which price data needs to be either between or on. This option is limited by the valuation date. The "From" field cannot be further than 180 days prior to the valuation date and the "To" field cannot be further than 180 days after the valuation date.



Monte Carlo Simulation of Price Volatility

This option is available only when using Publicly Traded Stocks or Indexes to Determine Price Volatility. It allows you to override the average generated by the tool with any number within the 95% Confidence interval. A fourth report column (not shown) titled "User Adjusted Average" will be displayed showing you the effects of your changes after your run a report.



Provide Your Own Price Volatility Factors

This option allows users to enter independently determined Price Volatility means and standard deviations.



DLOM Formula Selection

This is an option available in both DLOM Calculators. It allows users to select from three types of formulas to calculate a DLOM.



Longstaff formula inputs:

- Price volatility mean (required)
- Price volatility standard deviation (optional)
- Marketability restriction period mean (required)
- Marketability restriction period standard deviation (optional)

Black-Scholes

- Price volatility mean (required)
- Price volatility standard deviation (optional)
- Marketability restriction period mean (required)
- Marketability restriction period standard deviation (optional)
- Underlying asset price (optional)
- Strike price (optional)
- Risk-free rate (optional)
- Dividend yield (optional)

Finnerty

- Price volatility mean (required)
- Price volatility standard deviation (optional)
- Marketability restriction period mean (required)
- Marketability restriction period standard deviation (optional)

- o Risk-free rate (optional)
- o Dividend yield (optional)
- Marketing Period Carrying Cost
 - o Simple
 - o Compound
 - o Cost of Money (Annual Percentage Rate)

Understanding Calculator and Estimator Results

All Calculators and Estimators require specific Run credits to be utilized. After a Calculator or Estimator is run, a Run credit is spent and all data required to regenerate the results is saved in our database. This allows you to access previous Runs of the Calculators and Estimators and review the results. If you would like to change some inputs and Run again, you may click the "Modify Options?" button.

Each Run gives you access to four types of results.

Result Tables

These tables display the generated results from users' variable and static inputs along with their original inputs. When variable inputs are used, the results are reported with low bound, average, and high bound values. The bounds represent the 95% confidence interval. "Low Bound" DLOMs are calculated by using the low bound of the 95% confidence interval of the variable inputs. "High Bound" DLOMs are calculated by using the high bound of the 95% confidence interval of the variable inputs. "Average" DLOMs are calculated using the average values of the variable inputs. If the user checks the "Monte Carlo Simulation" option for any of the variable inputs, a fourth column designated as "User Adjusted Average" will be displayed in the Results tables that utilizes the specified "Monte Carlo Simulation" value.

Graphs

O Graphs can be generated by clicking the "Show Graphs" button. Each Calculator and Estimator has a specific set of graphs. All graphs can be downloaded at the same time by pressing the "Download All Graphs" button. Otherwise, when an individual graph is clicked the "Download Graph" command can be used.

Spreadsheets

An interactive spreadsheet of numeric data supporting the VFC DLOM
 Calculator® calculations is provided when the "Show Spreadsheets"

button is clicked. Estimators have a tab for "Other Graph Datapoints." Calculators additionally have tabs for "Probability Distribution Matrix" and "DLOM Distribution Matrix." To download the contents of any tab, select your target tab and then click the "Export to CSV" button.

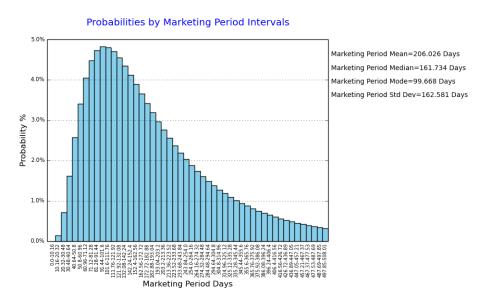
Report

 This is a PDF file that is generated when the "Print Report" button is clicked. It combines all Project information, result tables, and graphs into a single document. Please be patient while the report is being generated.
 You can view sample reports on the Home page of DLOMCalculator.com.

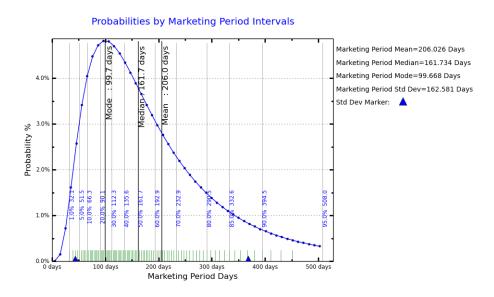
Marketing Period Input Tool Graphs

Any Calculator or Estimator that uses a variable marketing period will generate these graphs. These graphs can be used to estimate the time needed to see a business or other asset.

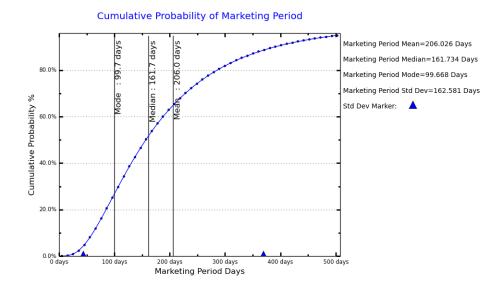
A graph of the probability distribution of the marketing period intervals. This
graph allows the user to estimate the probability of a sale occurring in a
particular time period.



A log normal probability density function graph showing the probability
distribution of the marketing period. This graph also presents the mean,
median, and mode of the range of marketing period probabilities, provides an
indication of the relative concentration of anticipated sale events, and provides a
means of estimating the percentage of sales events predicted to have occurred
after a particular number of marketing days have elapsed.



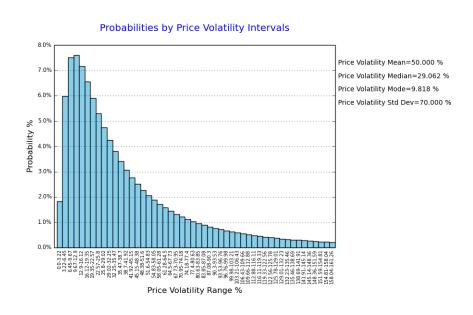
 A graph of the increase in the cumulative probability of the marketing period as the marketing period increases. This graph also presents the mean, median, and mode of the range of marketing period probabilities.



Price Volatility Tool Graphs

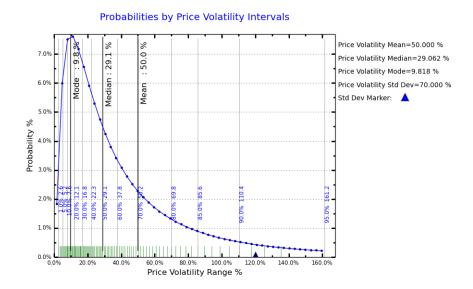
Any Calculator or Estimator that uses variable price volatility will generate these graphs. These graphs can be used to estimate the price risk associated with a particular marketing period of an asset offered for sale or associated with the anticipated holding period of an asset

 A graph of the probability distribution of price volatility. This graph allows the user to estimate the probability of a particular range of price volatility.

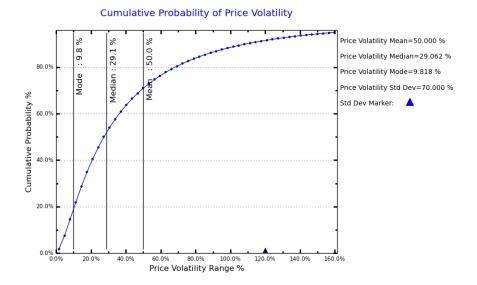


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 A log normal probability density function graph showing the probability distribution of the range of price volatility. This graph also presents the mean, median, and mode of the range of price volatility probabilities, and provides an indication of the relative concentration of potential volatility events.



 A graph of the increase in the cumulative probability of price volatility as the range of volatility increases. This graph also presents the mean, median, and mode of the range of price volatility probabilities.

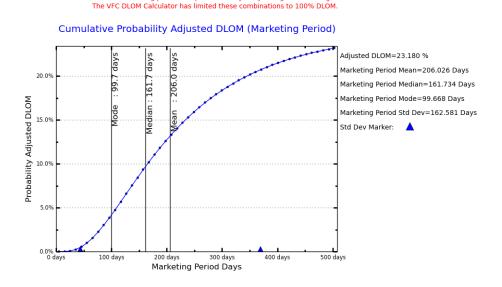


Single Probability DLOM Calculator using Marketing Period Probability

Two marketing period graphs will be generated when DLOM calculations are run using the Single Probability DLOM Calculator with Marketing Period Probability. No price volatility graphs can be generated in this mode. The available marketing period graphs are:

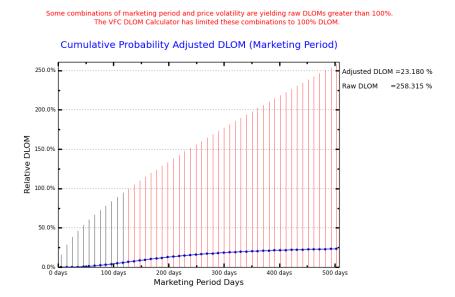
 A graph showing the cumulative probability-adjusted of DLOM as the marketing period increases. This graph also presents the mean, median, and mode of estimated DLOM over the range of marketing period probabilities.

Some combinations of marketing period and price volatility are yielding raw DLOMs greater than 100%.



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A graph that compares (a) the cumulative growth of the VFC Probability-Based
DLOM and (b) the raw Longstaff DLOM value that would result from applying the
Longstaff formula for the particular marketing period without adjusting for the
probability of occurrence or limiting the calculated DLOM to 100%. Marketing
periods resulting in greater than 100% DLOM for a fixed volatility are shown in
red.

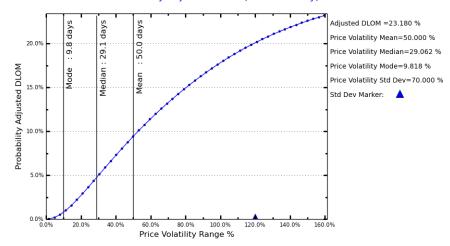


Single Probability DLOM Calculator using Price Volatility Probability

Two price volatility graphs will be generated when DLOM calculations are run using the Single Probability DLOM Calculator with Price Volatility Probability. No price marketing period graphs can be generated in this mode. The available price volatility graphs are:

 A graph showing cumulative probability-adjusted DLOM as the price volatility increases. This graph also presents the mean, median, and mode of estimated DLOM over the range of price volatility probabilities.

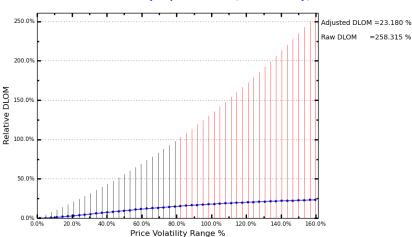
Cumulative Probability Adjusted DLOM (Price Volatility)



• A graph that compares (a) the cumulative growth of probability adjusted, value limited DLOM and (b) the raw Longstaff DLOM values that would result from applying the Longstaff formula for the particular price volatility event without adjusting for the probability of occurrence or limiting the calculated DLOM to 100%. Price volatilities resulting in greater than 100% DLOM for a fixed marketing period are shown in red.

Some combinations of marketing period and price volatility are yielding raw DLOMs greater than 100%. The VFC DLOM Calculator has limited these combinations to 100% DLOM.

Cumulative Probability Adjusted DLOM (Price Volatility)



Double Probability DLOM Using Marketing Period and Price Volatility Probabilities

The Double Probability DLOM Calculator uses both variable Marketing Period and Price Volatility, so their respective graphs will be generated. Furthermore, Double Probability DLOM specific graphs will also be generated.

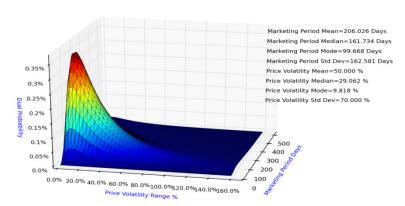
 A graph comparing the probability distributions of the predicted marketing periods and price volatilities. This graph allows the user to visualize the relative distribution of marketing period and price volatility probabilities.



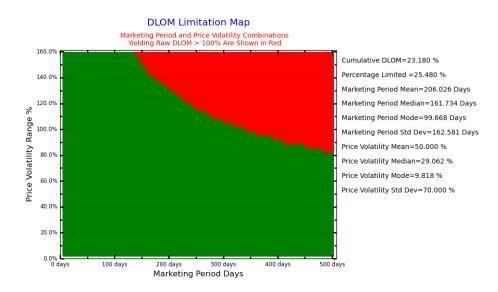


• A three-dimensional graph showing the distribution of the combinations of price volatilities and marketing periods. This graph allows the user to visualize the interaction of the determined marketing period and price volatility ranges of probability. This graph also reports the mean, median, mode, and standard deviations of the marketing period and price volatility probabilities.

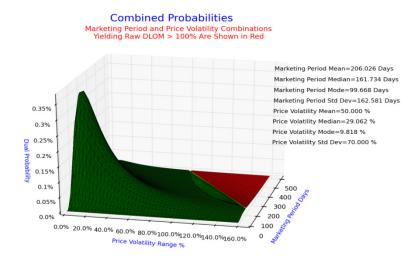
Combined Probabilities



• A 2-dimensional matrix graph of the probability events color coded in red to show events for which the raw Longstaff DLOM value exceeds 100%. This graph displays and reports the percentage of marketing period and price volatility combinations that result in raw Longstaff DLOM values greater than 100%. The VFC Double Probability DLOM Calculator limits such events to 100% DLOM.

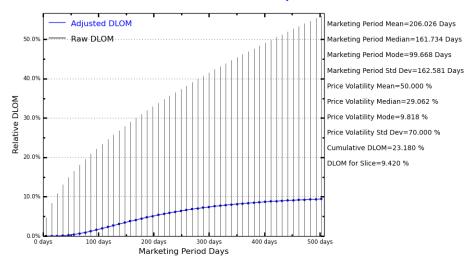


 A 3-dimensional graph of the probability events color coded in red to show events for which the raw Longstaff DLOM values exceed 100%. This graph allows the user to visualize the overall influence of marketing period and price volatility combinations that have been limited by the VFC DLOM Calculator.

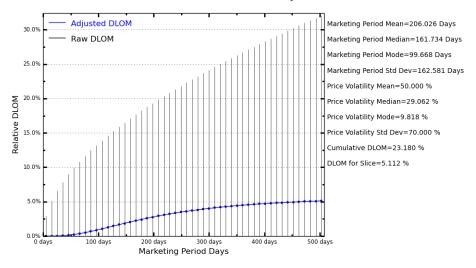


• A series of graphs that compare (a) the cumulative growth of probability adjusted and value limited DLOM over time measured at the mean, median, and mode of price volatility; and (b) the raw Longstaff DLOM value that would result from applying the Longstaff formula for the particular marketing period without adjusting for the probability of occurrence or limiting the calculated DLOM to 100%. Marketing periods resulting in greater than 100% DLOM for a fixed volatility are shown in red if they occur.

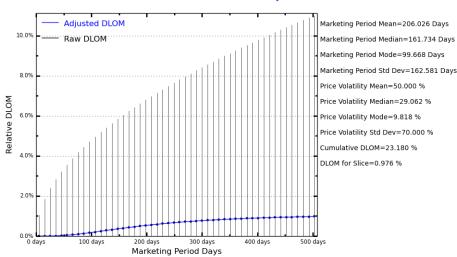
Cumulative DLOM
At the Mean of 50.00 Percent Price Volatility



Cumulative DLOM At the Median of 29.06 Percent Price Volatility



Cumulative DLOM At the Mode of 9.82 Percent Price Volatility

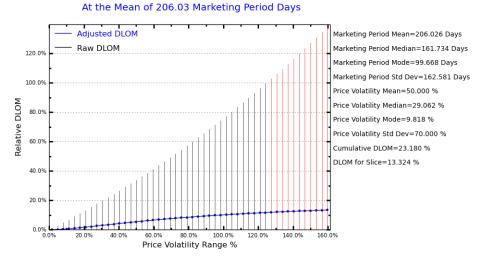


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A series of graphs that compare (a) the cumulative growth of probability adjusted and value limited DLOM over the predicted range of price volatility measured at the mean, median, and mode of marketing period probabilities; and (b) the raw Longstaff DLOM value that would result from applying the Longstaff formula for the particular price volatility without adjusting for the probability of occurrence or limiting the calculated DLOM to 100%. Price volatilities resulting in greater than 100% DLOM for a fixed marketing period are shown in red if they occur.

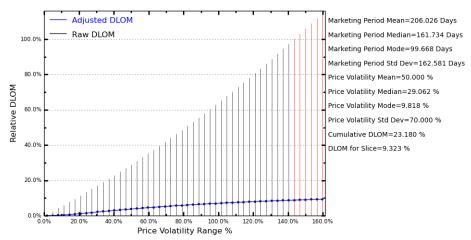
Some combinations of marketing period and price volatility are yielding raw DLOMs greater than 100%.
The VFC DLOM Calculator has limited these combinations to 100% DLOM.

Cumulative DLOM

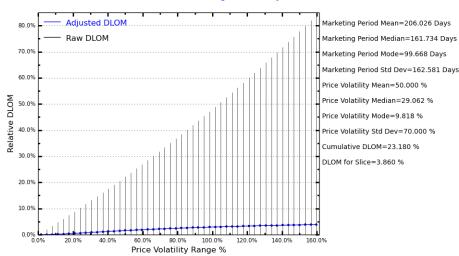


Some combinations of marketing period and price volatility are yielding raw DLOMs greater than 100%. The VFC DLOM Calculator has limited these combinations to 100% DLOM.

Cumulative DLOM At the Median of 161.73 Marketing Period Days







 A graph comparing the distributions of DLOM based on the predicted marketing period and price volatility trends. This graph allows the user to visualize the different influences of marketing period and price volatility on the VFC Probability-Based DLOM.

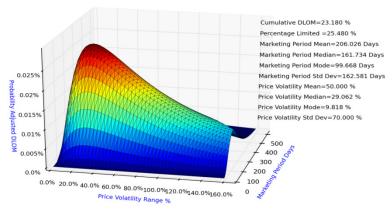
Separate DLOM Distributions of Marketing Period and Price Volatility (Before Combining the Probabilities)



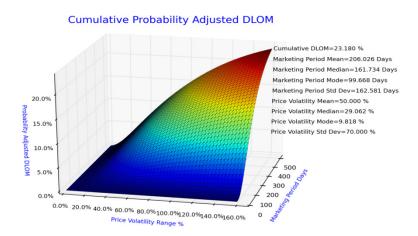
•

A three-dimensional graph showing the distribution of the VFC Probability-Based
 DLOM. This graph allows the user to visualize how DLOM is influenced by the
 combination of the range of marketing period and price volatility probabilities.

Distribution of Probability Adjusted DLOM



 A three-dimensional graph showing cumulative growth of the double probability distribution of DLOM.



Limited Free Trial Mode

The current mode of the Calculator or Estimator is displayed at the top of the page. All Calculators and Estimators have a free trial mode available. Click the "Explore Free Trial" button to activate the trial mode.



During the trial mode users cannot change their Project and cannot use some parts of the Marketing Period Inputs and Price Volatility tools. However, during trial mode users will not be charged any credits for using the Calculators or Estimators. Use these free trials to get acquainted with how the Calculators and Estimators work and view the results they generate.

Click the "Exit Free Trial" button located at the top of the screen to exit limited free trial mode

