Guide to FWI Graphics and Tables

An enormous amount of information can be gleaned from our graphic representations if you understand how to read them

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Key Takeaways

- This document details how to read and get information from Framework Investing's graphics. We cover the **BSM Cone Graph**, the **Complex Valuation Range Graph**, and the **Valuation vs. Market Table**.
- We also discuss our preference for the Price-to-Sales Ratio (PS Ratio) as a gauge of market risk.

Introduction

IOI's visual representation of investments and valuations are striking, unique and, once mastered, very informative. This paper details three distinctive graphical representations we publish with IOI Tear Sheets, ChartBooks, and other reports.

You will note several mentions of the "PS Ratio" (Price-to-Sales) ratio and this is the primary multiple we use to assess market risk. Ranges based on the PS Ratio on are charts multiply historical price-to-sales ratios by the average of IOI's short-term revenue projections. The lower boundary is usually the lowest decile or quartile PS Ratio value multiplied by the average of our worst-case short-term revenue projections; the upper boundary is usually the highest decile or quartile PS Ratio value multiplied by the average of our best-case short-term revenue projections. We define "short-term" as our "Explicit" valuation period – usually years 1-5 in the future.

Our valuations are based on our proprietary analytical methods, detailed in *The Intelligent Option Investor*, and use unique (and uniquely effective) measures like "Owners' Cash Profit" and "Free Cash Flow to Owners" rather than traditional measures like "EBITDA" or "free cash flow." The only traditional measure for which we forecast best- and worst-case scenarios is revenues. Because we are forecasting revenues, we rely on the price-to-sales ratio.

While some investors may be more comfortable thinking about PE Ratios, we believe PS ratios offer a clearer, more consistent view of a company over time. Earnings and its derivatives (e.g., "operating earnings," EBITDA, etc.) can be manipulated by management through accounting gimmicks. Sales are also subject to issues of revenue recognition, but is generally less susceptible to accounting tricks.

BSM Cone Graph

This is the quintessential IOI graph showing a simple valuation range compared to the option market's implied future price range for a stock.

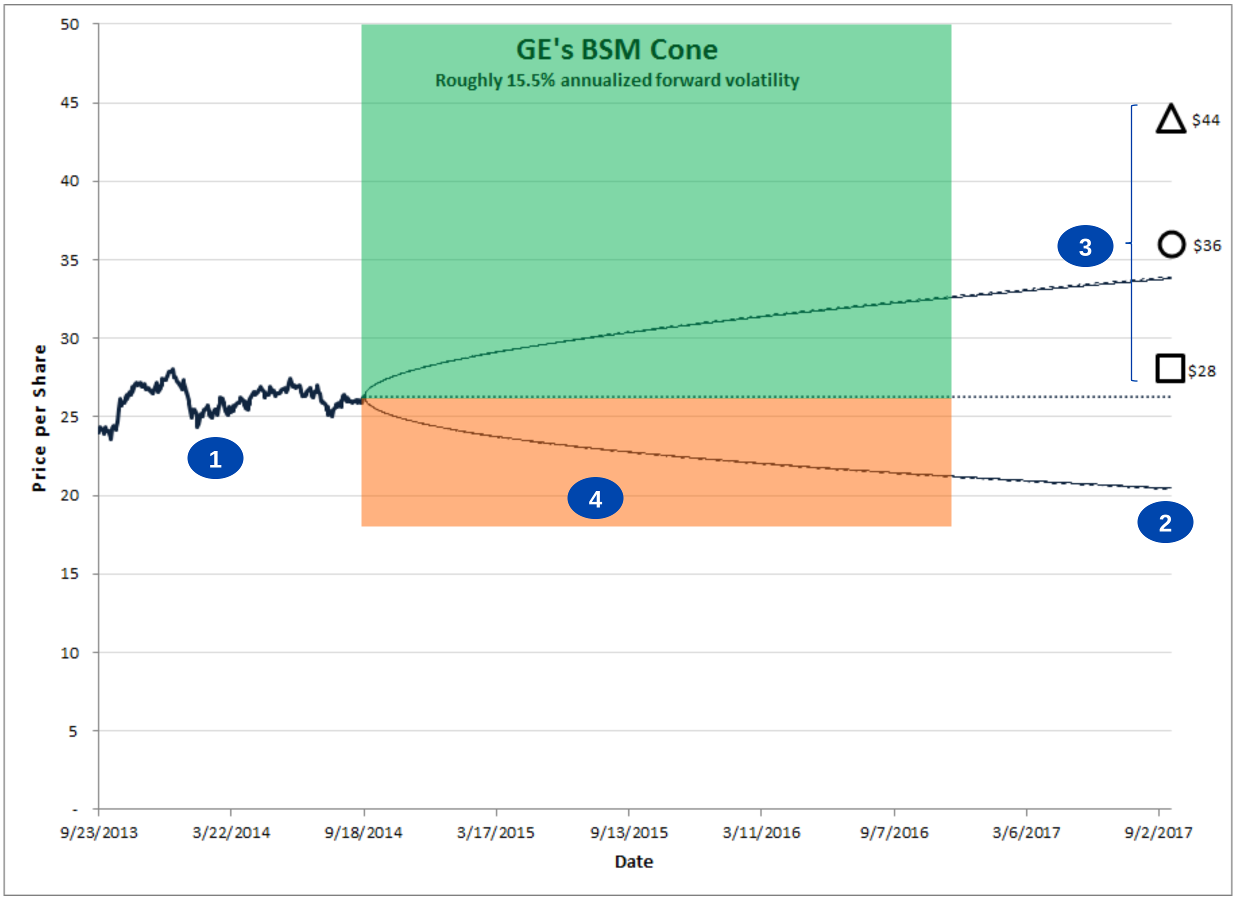


Figure 1. Source: Company Statements, IOI Analysis and Projections

It shows the following elements:

1) Historical price of the underlying stock over the past year of trading.
2) Conical section[1] indicating the option market's expectations for the future price of the stock (termed the "BSM Cone" in *The Intelligent Option Investor*).
3) Best, worst, and most likely case valuations based on IOI's fundamental analysis of the company.
4) Shaded region showing the area of exposure for the option strategy. Green shading signifies gaining exposure through purchase of a contract; red shading signifies accepting exposure through the sale of a contract; gray shading indicates a cancellation of exposure. A two-toned, orange-and green exposure, as shown above, indicates the purchase of an ITM option.

We will also sometimes show a break-even line. For bullish strategies, we will use the term "Effective Buy Price (EBP)" and for bearish ones, "Effective Sell Price (ESP)". For strategies that mix bullish and bearish elements, we use "Break-Even Price (BEP)".

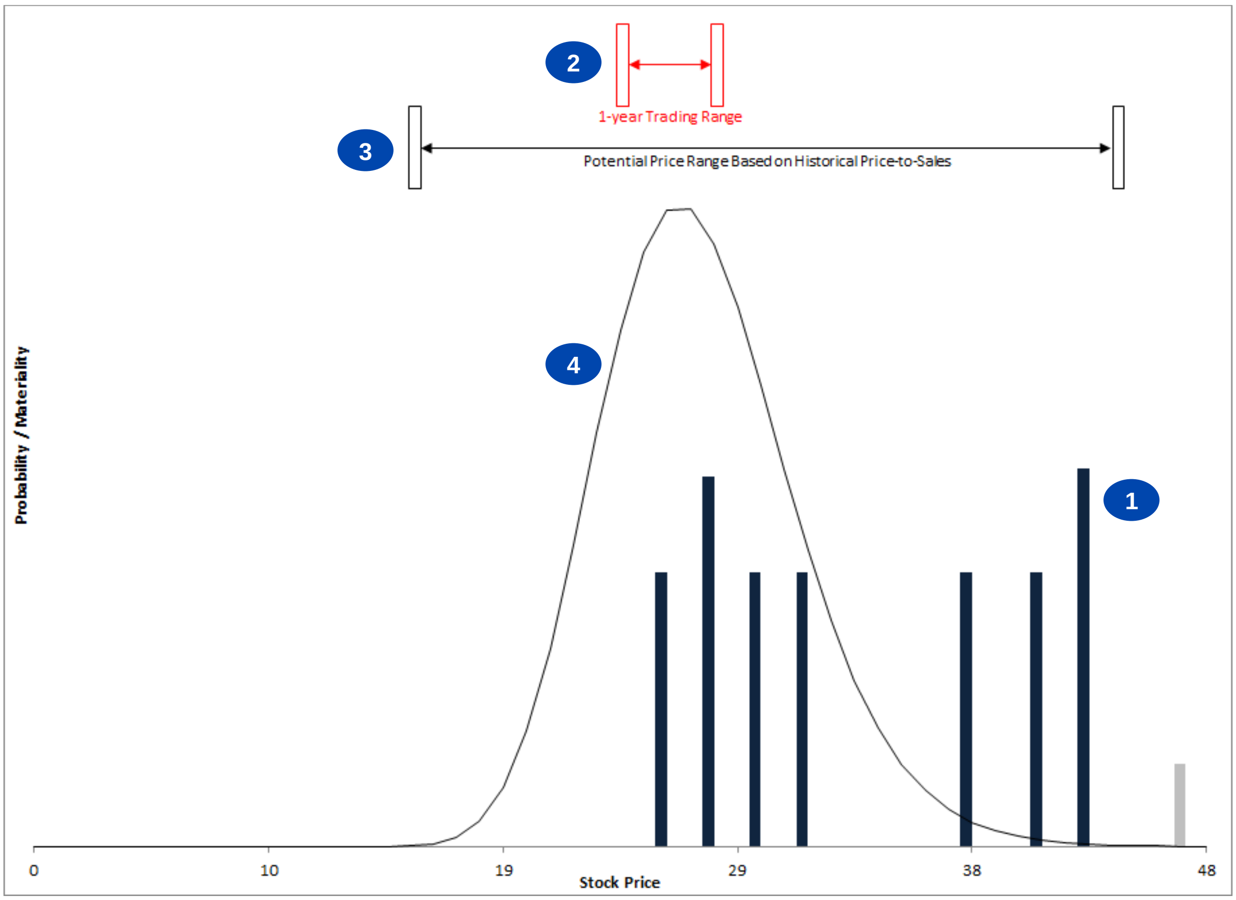
[1] In this diagram, you may be able to make out two conical sections. The outer cone, with the dotted line, represents the "ask vol" and the solid line the "bid vol." The fact that the dotted line is outside of the solid one indicates that the ask price is higher than the bid price, and means that the range of possible stock price outcomes as seen by sellers is wider than that seen by buyers.

The theory behind the BSM cone and the representation of options' ranges of exposure is explained in Part I of *The Intelligent Option Investor*, chapters 1-2. Technical details regarding how BSM cones may be created using market data are explained in detail in chapter 7.

An investor has an edge when the market price of a stock is significantly different than its intrinsic value range or when the range foreseen by the option market is much wider or narrower than that of its intrinsic value range. In the above example, the option market's range of outcomes is much wider than what we believe the uncertainty of the firm is on a fundamental basis.

Complex Valuation Range Graph

This graph shows a complex valuation range that shows each of the maximum of eight valuation scenarios for a company and compares their location to the probability distribution as implied by the options market.



This graph shows the relationships between four valuation / market elements:

1) FWI's valuation scenarios (dark blue and gray columns)
2) High- and low-price range for the stock over the last year (red bars)
3) Stock price range implied by overlaying historical price-to-sales ratios (PSR) on IOI's best- and worst-case revenue scenarios.
4) Option market's probability distribution (curved line)

All scenarios IOI considers as having a material chance of occurring are shaded in blue; all scenarios IOI considers as not having a material chance of occurring are shaded in gray and the height of the bar is relatively low. The most likely scenario or scenarios (associated with values of $28 and $44 here) are identified by being the tallest blue bars on the graph.

The height of the bars is not meant to show a proportional difference in probability of occurrence. Gray bars will be shortest; material valuation will be taller; FWI's most likely valuation scenarios will be tallest. The tallest columns correspond to the best- and worst-case valuations in the BSM Cone graph.

The curve shows the price range considered most likely by the option market. For a lognormal curve, the point on the curve representing the "expected" value lies a bit to the right of the peak of the curve. As such, by looking at the purple curve, you can see the range of stock prices that the option market considered most likely when these data were drawn. This curve represents the BSM Cone in profile view.

Valuation vs. Market Table

The table shows the numerical values of the FWI valuation scenarios, the high and low stock prices, and the stock prices implied by the PSR. We often overlay it over the Complex Valuation Range Graph.

	Case / Scenario	Value
	PSR Implied Low	15
	252-day Low	24
	1% | 12% | 5%	26
*	1% | 12% | 7%	28
	252-day High	28
	5% | 12% | 5%	30
	5% | 12% | 7%	32
	1% | 17% | 5%	39
	1% | 17% | 7%	42
	PSR Implied High	44
*	5% | 17% | 5%	45
	5% | 17% | 7%	48

FWI valuation scenarios are identified according to the following convention:

Near-term Revenue Growth | Near-term Profitability | Medium-term FCF growth

Taking this into consideration, we can translate the entry listed as "5% | 12% | 5%" as identifying the scenario assuming 5% year-over-year revenue growth and 12% profitability (as measured by OCP) for the stage one valuation period and an 5% growth in free cash flows to owners in the stage two valuation period.