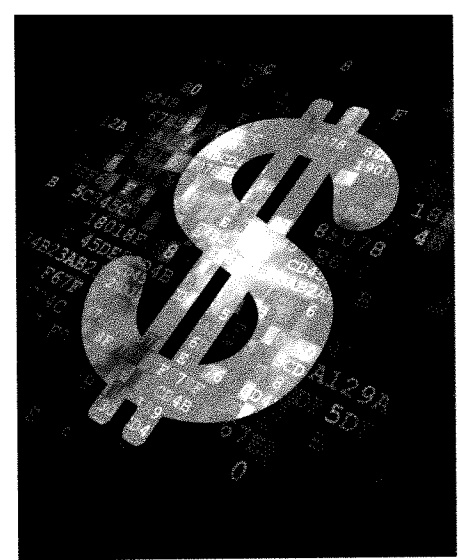


How to Value Entities with Complex Capital Structures

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The first step in valuing entities with complex capital structures is to perform a valuation of the subject entity. Most valuations begin with the valuator selecting one or more traditional valuation approaches: income approach, market approach and/or asset approach. The use of each depends on the subject company, subject interest and valuation use. The person performing the valuation must perform “reasonable valuation methods, reasonably applied.”

The second step in valuing complex capital structures is to allocate fair market value (FMV) of the enterprise value among the various classes of securities. Some difficulties in assessing various types of securities include misunderstanding of deal terms or their effects, bridge financing issues and differing voting rights.

Capital structure complications include dealing with convertible debt, preferred stock and common stock. The rights associated with common stock can include founder stock, restricted stock and general common stock. The types of associated debt and terms require careful analysis. Debt is typically nonconvertible or convertible; preferred stock is nonconvertible or convertible and nonparticipating or participating. Also consider any options and warrants.

Three common methods of allocation are the current value method (CVM), the option pricing method (OPM) and the probability weighted expected return method (PWERM).

A company’s capital structure drives the need for an allocation approach. If a simple structure (common stock only) value divided by shares outstanding or if a complex structure (common and preferred stock), the value needs to be allocated among the various classes of

securities. The more complex the capital structure, the greater effect the capital structure will have on the common share price.

Current Value Method

The CVM is where the equity value is reduced by the senior claims of preferred shares, with the remaining balance allocated to common shares (or common and preferred, if there is participation). This is similar to the old “waterfall” analysis.

For example: Assume FMV of \$5 million with 2 million shares of common, then add 3 million preferred shares with \$1 liquidation participation. Finally, add full participation so that each preferred share gets one share of common.

- *No Preferred* – Common value per share is \$2.50 ($\$5M/2M$ common shares).
- *Preferred Nonparticipating* – Common value per share is \$1.00 ($(\$5M - \$3M)/2M$ common shares).
- *Preferred Fully Participating* – Common value per share is \$0.40 ($(\$5M - \$3M)/(2M$ common shares plus 3M common shares to preferred)).

Option Pricing Method

The OPM values each class of stock as a call option with a distinct claim on the enterprise value of the company. The Black-Scholes option pricing can assist in this method. Exercise prices are based on the liquidation preferences and conversion value of the securities.

You must determine volatility and pricing term use of the OPM. Selecting the proper peer group requires extensive analysis and determination of term length, liquidity and another funding round or date.

OPM is a five-step process: 1) analyze the capitalization table; 2) make OPM assumptions (Black-Scholes assumptions); 3) calculate breakpoints; 4) make Black-Scholes calculation of tranche; and 5) allocate tranche values.

Probability Weighted Expected Return Method

PWERM weighs estimated values for several likely liquidity scenarios, or lack thereof, including IPO, acquisition, dissolution and private (no exit). The value of the common stock is determined for each scenario at the time of each future liquidity event and discounted back to the present using a risk-adjusted discount rate.

What to Use?

When should you use CVM, OPM or PWERM? CVM is preferred at an extremely early stage or liquidity event. OPM is preferred at a mid-stage or when the CVM equals \$0 for common stock or as a “back-solve” on a recent-funding round. PWERM is preferred at an extremely late stage or if there is an expected exit within five years.

The American Institute of CPAs has published the *Valuation of Privately Held Company Equity Securities Issued as Compensation*. Chapter six discusses complex capital structures, and the appendix includes detailed samples. ❏

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