The Backsolve Explained – Price Paints a Picture

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When you have a company's capital structure mapped out with a new preferred round of equity, but there aren't any financials to support the more traditional valuation methods, how should a value be determined?

This is a familiar crossroads in the venture space as companies that recently raised an equity round still need time to grow and generate momentum before showing financial gains. Given the early stages of operations for a number of investments and limitation of inputs for valuation methods, this is where the backsolve shines.

For example, let's use "Series A," a hypothetical new round that recently closed.

The backsolve looks similar to an option pricing model with one key difference; the enterprise value shown is being determined by the new pricing instead of allocated.

An option pricing model (OPM) allocation assumes a predetermined enterprise value, and then allocates through the capital structure to reach a value for a particular security with market inputs. When using a backsolve, the enterprise value is being solved for as a variable in the option pricing calculation. The preparer is searching for that enterprise value based on the Series A pricing, and also using the capital structure's terms and conditions. You cross the finish line for a backsolve when there is zero variance between the proceeds received by the Series A shares and the price paid for Series A shares.

"Backsolve" gets its name from the one variable in the OPM calculation that is switched with the pricing input to back into an enterprise value. This answers the question:

> Based on the expected exit timing and volatility of the company as of the transaction date, what enterprise value is required to return the amount invested in Series A using the capital structure, expected exit timing, and market inputs?

When comparing other methods that rely on the new price negotiated, one facet of the backsolve that makes it a little easier to swallow is the fact that it utilizes the terms set in the articles. The post-money, for example, is another method that relies on a new round's price and has been used more prominently in the past. Post-money produces more of a blanketed assumption for the company value, assigning no preferences and assuming all outstanding shares are worth the same as the new round. This can inflate the value above a reasonable range since the common shares and possible junior preferred series are not valued at the exact same price point.

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Backsolve and OPM are sometimes seen as different terms for the same methodology approach. However, a backsolve is an indication of value derived from equity pricing, and an OPM is an allocation method. Keep this in mind when communicating processes or during report presentations to maintain clarity on methodology.

A backsolve is the most objective of the available valuation methods because it is the least malleable approach. The backsolve is an option pricing calculation using key market inputs (for more information on market inputs, read: "Option Pricing Model-Allocation of Value"), but does not have the same flexibility or subjective points as a guideline public company or discounted cash flow method might allow. Any item up for sale is only worth what someone is willing to pay for it, and the backsolve really drives this home to show an entity's value based on the pricing and terms set using the most recent equity financing.

There is still one last hurdle to discuss regarding the backsolve. When considering a backsolve that has been used in the past, how long should a transaction be considered relevant? Typically, a transaction's indication should be phased out over eighteen months since the pricing becomes stale as time passes and the company further develops operations and offerings. There are exceptions to this rule, such as situations in which a market approach can be added to support the backsolve's findings even when the transaction falls closer to the valuation date.

On the flip side, if the company has not generated revenue for a year or two following the latest transaction, the backsolve is still an acceptable approach to value the company. The backsolve can be applied to include a market equity adjustment (MEA) when considering the subject's historical performance. The MEA reflects the company's progress, stability, or decline in the time elapsed from the transaction to the report date against the operating sector.

Although the backsolve does not account for future equity fundraising or debt support, the report analysis can only be conducted with information that is known or knowable as of the stated valuation date (per AICPA guidance). As always, it is crucial in the analysis process to have a working relationship with the subject company's management team to gain better insight into probable outcomes regarding milestones, developments and an eventual exit targeted for a future date. Additionally, the terms considered in the most recent round selected for a backsolve should only be considered once those terms are solidified and finalized into articles or a certificate of incorporation.