

A More Holistic View of VC Valuations

A primer on venture capital valuations & terms

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Key Takeaways

- The concept of post-money valuations breaks down when subjected to significant equity structure complexity. The cap tables of VC-backed companies exhibit this complexity due to standard VC investments in preferred stock usually containing different levels of investor rights and protections. For this reason, we advocate for a more holistic view of valuation rather than relying solely on post-money valuation.
- This note includes a primer on the most common rights negotiated in VC investments that influence valuation. While liquidation preferences of over 1.0x can contribute to a reduction in common share value, participations rights have a much larger effect on relative overvaluation.
- The probability-weighted expected return method and the option pricing method represent two alternatives that take into account investor rights protections. The option pricing method only incorporates liquidation preference and participation rights, while the probability-weighted expected return method can be customized to incorporate virtually any rights.

Introduction

Applying traditional valuation methods to VC investments can be nearly impossible due to attributes such as illiquidity, nascent technologies, and non-traditional business models, as well as the lack of historical financials and real-time mark-to-market conventions. The arcane equity structure of these companies only adds further complexity to arriving at a fair valuation; in addition to common shares, late-stage VC-backed companies often contain four or more classes of preferred stock. Since each class contains different rights and protections negotiated by investors, there can be material differences in share value between classes depending on the exit value.

The commonly used post-money valuation figure employs a simplistic methodology, applying the most recent round's share price to all outstanding shares to arrive at a valuation. This works for determining the market capitalization of a standard public company, which usually has a single class of common shares. However, it does not account for the nuances generated by the inclusion of different share classes. Due to the complex equity structure of VC investments, we advocate for a more holistic view of valuation rather than relying solely on post-money valuation. This is a key consideration for founders/companies raising VC funding in order to have a well-rounded view of common share valuation, as well as for investors when forecasting likely exit scenarios.

In order to illustrate the impact of these terms, we've selected five VC deal terms that we believe have a substantial effect of preferred share valuation: liquidation preference, participation rights, anti-dilution provisions, automatic conversion and super-voting rights.

Liquidation Preference

Liquidation preference refers to a preferred shareholder's right to receive a guaranteed payoff based on a multiple of the original investment. While a 1.0x multiple of invested capital is the most common liquidation preference, higher multiples can be used to provide more investor protection. A 1.0x liquidation preference in essence provides the right for the investor to get their money back in the event converting to common shares would result in a lower payoff.

To illustrate the effect of this protection on share class valuation, consider a hypothetical VC-backed company, Buzzword Inc., that has raised \$1 million in Series A funding at a \$10 million post-money valuation and \$7 million in Series B funding at a \$21 million post-money valuation. First, let's assume both rounds were negotiated with a 1.0x liquidation preference and Buzzword Inc. is acquired for \$20 million. Under this scenario, the Series A investors would convert to common and receive their 10% ownership, which would be worth \$1.3 million. If the Series B investors converted their shares to common, however, they would be worth just \$6.6 million. Therefore, the Series B investors would instead elect to receive their \$7 million via the liquidation preference, leaving \$11.7 million for the remaining common shareholders. At any exit valuation greater than \$21 million in this scenario, the liquidation preference essentially becomes worthless, as Series B investors would choose to convert to common to maximize their payout. We will use this scenario as a base case to demonstrate the effect other terms have on share class valuation.

Buzzword, Inc. Example

PREFERENCE CLAIMS	OWNERSHIP PERCENTAGE	ORIGINAL INVESTMENT (\$M)	PREFERENCE MULTIPLE	LIQUIDATION PREFERENCE (\$M)	PRIORITY
Series A Preferred	10%	\$1.00	1.00x	\$1.00	Pari Passu
Series B Preferred	33%	\$7.00	1.00x	\$7.00	Pari Passu

Source: PitchBook

CONVERSION SCENARIOS	OWNERSHIP PERCENTAGE	NO PREFERRED CONVERT (\$M)	IF ONLY SERIES A CONVERTS (\$M)	IF ALL PREFERRED CONVERTS (\$M)
Series A	10%	\$1.00	\$1.30	\$2.00
Series B	33%	\$7.00	\$7.00	\$6.67
Common	57%	\$12.00	\$11.70	\$11.33
Exit Value	100%	\$20.00		

Source: PitchBook

If both sets of preferred shareholders had 1.5x liquidation preferences under the same \$20 million exit scenario, the payouts to common shareholders change significantly. Both Series A and B investors would choose not to convert and instead receive \$1.5 million and \$10.5 million, respectively, via their liquidation preference. With that seemingly slight change in terms, the remaining common shareholders would now only receive \$8 million, a 32% decrease in value by increasing the liquidation preferences by 0.5x.

Buzzword Inc. example, continued

PREFERENCE CLAIMS	OWNERSHIP PERCENTAGE	ORIGINAL INVESTMENT	PREFERENCE MULTIPLE	LIQUIDATION PREFERENCE	PRIORITY
Series A Preferred	10%	\$1.00	1.50x	\$1.50	Pari Passu
Series B Preferred	33%	\$7.00	1.50x	\$10.50	Pari Passu

Source: PitchBook

CONVERSION SCENARIOS	OWNERSHIP PERCENTAGE	NO PREFERRED CONVERT (\$M)	IF ONLY SERIES A CONVERTS (\$M)	IF ALL PREFERRED CONVERTS (\$M)
Series A	10%	\$1.50	\$0.95	\$2.00
Series B	33%	\$10.50	\$10.50	\$6.67
Common	57%	\$8.00	\$8.55	\$11.33
Exit Value:	100%	\$20.00		

Source: PitchBook

Participation Rights

Participation rights attached to preferred shares allow the investor to elect to receive the benefits of preferred shares along with the additional upside of common shares. Without having to convert their shares to common, the investor can receive their liquidation preference while simultaneously participating in their pro rata ownership of the common stock, usually up to a certain multiple of their investment.

Recall the Buzzword Inc. example, with the added stipulation that both series of preferred stock are participating preferred with a 2x cap. Under this scenario, Series A and Series B investors would choose not to convert, receiving back their \$1 and \$7 million investments via the liquidation preference. But with the participation rights, Series A and Series B shareholders will also receive a pro rata share of the remaining payout until they achieve a 2x return. In this example, these investors will enjoy an additional \$1 and \$4 million, respectively (10% and 33% of remaining value after liquidation preference). In this scenario, the remaining common shareholders would then have a claim on only \$7 million, a full 40% lower than our base case payoff to common shareholders.

Buzzword, Inc. Example

PREFERENCE CLAIMS	OWNERSHIP PERCENTAGE	LIQUIDATION PREFERENCE	PARTICIPATION CAP	PRIORITY
Series A	10%	1.00x	2.00x	Pari Passu
Series B	33%	1.00x	2.00x	Pari Passu
Common	57%			Junior

Source: PitchBook

SCENARIO EXIT VALUE:	\$20.00 (\$M)
Series A Preference	\$1.00
Series B Preference	\$7.00
Remaining Equity Value	\$12.00
Series A Participation - 10%	\$1.00
Series B Participation - 33%	\$4.00
To Common Shares	\$7.00

Source: PitchBook

TOTAL ALLOCATIONS (\$M):	
Series A	\$2.00
Series B	\$11.00
Common	\$7.00
Total Equity	\$20.00

Source: PitchBook

Anti-dilution Provisions

Anti-dilution rights negotiated in VC deals mainly protect investors by increasing the ratio at which preferred shares convert to common shares ratio to counteract the effect of lower valuations in subsequent funding rounds or at exit. These provisions usually come in one of two forms: full ratchet or weighted average. The full ratchet is the more extreme of the two. In the event of a share issuance at a lower price, an investor's existing cost basis would be ratcheted down to the newly issued price, resulting in an increase in total shares owned to maintain their prior ownership percentage.

The more moderate, and now more commonly used, provision is the weighted-average approach. This method uses a formula that takes into account the share price of the new issuance as well as the number of shares issued. This means a small new financing at a lower valuation would have a correspondingly lower effect on the conversion ratio than a large financing at the same valuation.

The downside protection from either of these two anti-dilution provisions provides extra value to the preferred shareholder relative to the common shareholders, with full ratchets capturing the most relative value. From the founder's perspective, the impact of these rights can be mitigated by negotiating pay-to-play terms, which require existing VC investors to participate in subsequent funding rounds to receive their anti-dilution protections.

Automatic Conversion

When exiting via IPO, it is common—and usually critical—that all preferred shareholders convert to common so the public company will have a homogenous class of shares and prevent the risk of market overhang – the possibility of an imminent dilution and selling pressure. This process can be complicated by the presence of automatic conversion thresholds, which stipulate a minimum share-price increase from the original purchase price as well as the size of the offering that automatically triggers a conversion, commonly referred to as a “qualified IPO.” For investors, this ensures they can receive their liquidation preference if a proposed IPO represents a suboptimal outcome.

Automatic conversion terms have the possibility of serving as a de facto IPO veto option for some investors if the terms here are too investor friendly, or if the terms are not standardized or updated at every funding round. This is key to keep in mind to ensure that an IPO isn’t derailed by accommodative investor protections.

Super-voting Rights

VC terms have been evolving as founders have sought to maintain tighter control of their companies. One example is the creation of a class of super-voting shares. In the most extreme examples, these protections even include selling shares in an IPO that have no voting rights at all. While it’s difficult to quantify, the ability to voice an opinion and potentially sway the strategy of the business obviously contains value. In public equity markets, shares with voting rights generally trade at a premium to those that have the same claim to cash flows but lack voting rights, which suggests that the same should be true when working to value a private company. For example, voting shares of Viacom, Inc. currently trade at about a 25% premium to non-voting, whereas Alphabet Inc. class A shares only command a 1.5% premium to their non-voting class C shares.

Post Post-Money Valuations: A Better Way to Value Startups

PWERM

The probability-weighted expected return method (PWERM) is a back-solving methodology using scenario analysis. To calculate equity valuations for each class of shares, a range of expected exit values are estimated along with the probability of each of those scenarios. Then for each scenario, the payouts for each class of shares are determined based on the maximum payout, either via the class' common stock value or by calculating the rights and protections that apply would pay out if not converted. The remaining value is then applied to the common shareholders to determine share value.

While this is the most customizable approach, it has drawbacks. It is a finite model limited by the number of outcomes selected, which relies heavily on estimations for exit values and probabilities. This reliance on assumptions inserts further variability in the result while making it more difficult to audit and substantiate.

Option Pricing Method

The option pricing method (OPM) is another way to perform equity valuation while accounting for the multi-class share structure. This method allows for the modeling of payouts for shares with liquidation preferences and participation rights by using call option payout structures at different strike prices to replicate equity value. In essence, the OPM uses the Black-Scholes formula to assess the option values at different "breakpoints" in equity value (i.e., the point when Series A investors would choose to convert to common shares, etc.). Once the breakpoints are determined, the value of the call options can be calculated by setting the strike prices equal to the breakpoints and estimating the time to expiration (exit), volatility, and the risk-free rate. These calculated values are then allocated based on the percentage of marginal proceeds each class of shares receives at each breakpoint.

This calculation can be fairly complicated and convoluted, usually requiring software assistance; however, the model has relatively few inputs, which are the basic variables in the Black-Scholes formula plus the equity value. Another shortcoming of the OPM is that it's not very adaptable to more exotic terms, which don't necessarily fit the conventions of option payoffs. But while the complexity leads to a perception of OPM as a bit of a black box, this method is considered highly auditable due to its small number of assumptions and strict use of terms directly from formal documents.

Again, no method will be perfect in determining the exact valuation but a more complete knowledge of the methodologies along with the limitations can help assist in better decision making. This is especially poignant to provide some context for the ever-present media reports that categorically overvalue VC-backed companies through the sole use of post-money valuation. Finally, this note will serve as a jumping-off point to provide deeper exploration of some tangential topics as well as a baseline for our ongoing research around VC valuations.