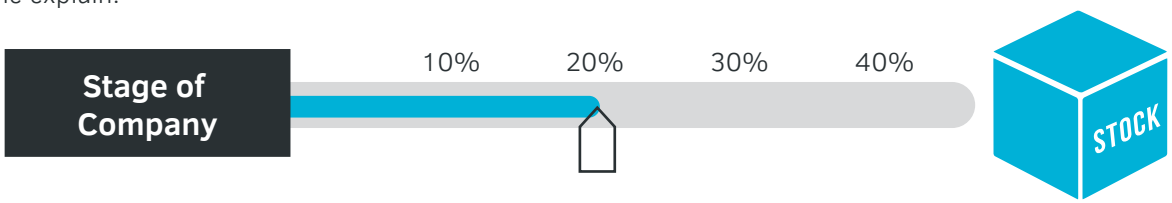
409A-COMMON VALUE AS A PERCENTAGE OF PREFERRED?

BY MATTHEW TILLOTSON

Scalar

TABLE OF CONTENTS

"What is my company's common stock worth as a percentage of its recently issued preferred stock?" Or, "What is the typical ratio of preferred to common stock?" I have been asked this question in some variation hundreds (thousands?) of times over the last decade – it likely only trails "Dad, can I have a snack?" as the most frequently asked question in my life. The short answer on the snack is, of course, "Ask Mom." The short answer on the value of common stock is "probably 30% – 45%, or 15 – 30% (depending on the terms of your preferred stock) . . . but also possibly 0% - 100%."." This may seem a bit odd at face value, so let me explain:



Back in the good old days, venture industry pioneers used a ten percent rule of thumb, meaning stock-option strike prices were frequently set at 10% of the latest preferred price. This rule of thumb still reverberates around the venture capital community, though it has loosely evolved to include a range of expectations depending on the financing stage of the company; i.e., ~20% of preferred for Series A, ~30% for Series B, etc. While these percentage-of-preferred calculations can serve as helpful reference points or sanity checks, it is important to remember that these calculations are not actually driving the valuation conclusion. The value of common stock relative to preferred stock is driven by simple valuation theory and logic – current value is equal to future benefit streams, discounted to the present. In other words, the relative value of these securities depends on how much more a preferred share will receive than a common share in the future.

Two factors impact the answer to this question more than any other:

1. The expected outcomes for the company (exit values and probabilities)

2. The economic terms of the preferred stock (the cash waterfall at those exit values)

EXPECTED OUTCOME

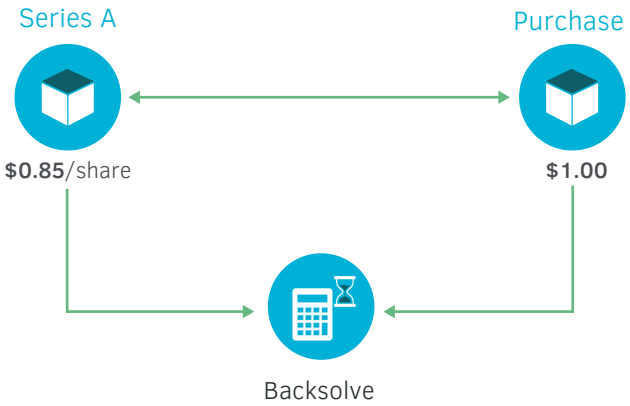
For a venture-backed company, the future benefit stream typically comes in the form of cash proceeds from a liquidity event (IPO, acquisition, liquidation, etc.). There are two popular approaches to project future outcomes in a common stock valuation:

01 **Probability Weighted Expected Return Method (the "PWERM"):** The PWERM requires an input of discrete projected outcomes; e.g., 20% chance of liquidation, 30% chance of a $20M exit, 25% chance of a $70M exit, etc.). The PWERM often comes into practice for later-stage companies which have greater clarity into possible exit timing and values.

02 **Option Pricing Method (the "OPM"):** The OPM reflects future outcomes through a continuous distribution around the current company value, based on a lognormal distribution of outcomes (the theory being that this may approximate reality as stock prices have been observed to be, more or less, lognormally distributed). This distribution theoretically captures "downside" liquidation scenarios, "upside" exit scenarios, and everything in between.

For most venture-backed companies, the OPM is preferred given the difficulty of substantiating specific exit values and probabilities (and also because it usually indicates a lower price for the common stock – generally the goal for 409A valuations).

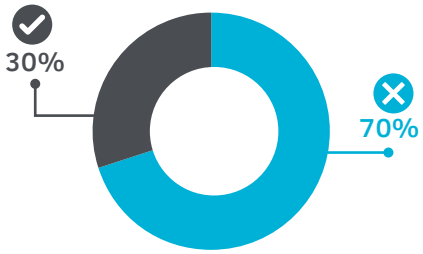
Whatever the selected approach, it is important that the expected outcomes support the price per share of recently transacted preferred stock (assuming that the transaction price is reflective of fair market value). If the valuation model implies that Series A is worth $0.85/share when it was just purchased for $1.00, the conclusion will be difficult to defend. This is when you're likely to hear the word "backsolve" from your valuation provider – because we know that Series A is worth $1.00, we're solving for - or backing into - an input or inputs that support that value.



Scalar

NO UPSIDE TO THE DOWNSIDE

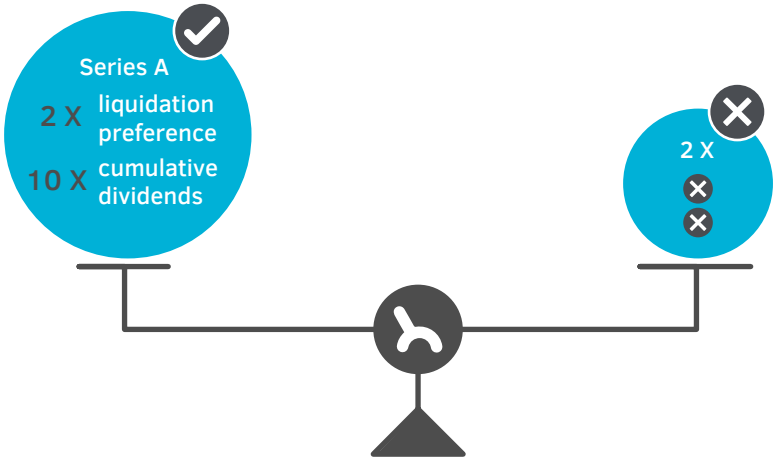
On the topic of backsolves, I'll often have conversations with clients who, in hopes of driving the 409A conclusion as low as possible, will passionately explain all of the company's warts and the many reasons why it is unequivocally doomed to fail (it's like the bizarro fundraising pitch). Unfortunately, and perhaps counterintuitively, this argument lends support to a higher valuation conclusion for common. Here's why:



In a complete failure scenario (exit value of $0), common and preferred stock both receive the same value. If a company has a 70% chance of complete failure, the outcomes in the remaining 30% of scenarios must look quite attractive in order to support the recently transacted $1.00/share – more precisely, in this example, the 30% success scenario would have to produce a present value of preferred stock of $3.33/share. At exit values high enough to produce that outcome, it's likely that preferred stock has opted to convert to common stock, and both security holders would effectively receive the same distribution on a per-share basis. In this case, the expected outcome for common and preferred is identical; and, aside from any additional discounts that may be applicable, so is the value. More generally, a high degree of risk – or a wide range of outcomes – typically make common and preferred shares more similar in value. The client's objective would be best served arguing that the company will almost certainly sell for a value equal to the total liquidation preference of the preferred shares (no more, no less) – and preferably tomorrow (otherwise, present-value discounting may result in something lower than the target preferred value of $1.00/share). While this exit assumption may not be reasonable, there are ways to appropriately reflect risk in the valuation assumptions that drive the disparity between preferred and common values.

ECONOMIC TERMS OF THE PREFERRED STOCK

Determining the distribution of expected company outcomes is only the first step in valuing common stock relative to preferred stock. Next, we need to calculate "who gets what" in those outcomes. This makes the economic terms of the preferred stock the single most important factor in the discrepancy in value between the stock classes. Some of the standard preferred stock terms include: liquidation preference, participation rights (non-participating/participating), participation caps, and dividends. Naturally, the more economic preferences that the preferred shares have, the greater the differentiation will be between the value of common and preferred. For example, if Series A is participating preferred stock with 10% cumulative dividends, it will receive significantly more value on a per-share basis than common stock in almost any outcome; thus, its value is much greater. Compare that to a Series A that is non-participating with no cumulative dividends – in this case, the common and preferred stock receive the same per-share value at any exit above the post-money valuation, so the disparity in value is reduced.



To demonstrate this principle, we have modeled a very simple Series A capitalization table (one million Series A shares, three million common shares) and performed sensitivity analyses of the value of common based on six different variations of the Series A terms (the % of the company owned by preferred stock and seniority of layered preferred stock are other significant factors not captured in this example). As you can see, the economic terms have a significant impact on the concluded value per common share. If your preferred stock has "plain vanilla" economic terms (1x liquidation preference, non-participating, no cumulative dividends), as is increasingly becoming the norm in the current environment, the conclusion will likely fall in the 30% - 50% range. If investors received more beneficial economics, then a conclusion in the teens or 20% range is possible.

Inputs	
Maturity	5 Years
Volatility	50%
Risk-free Rate	2.00%

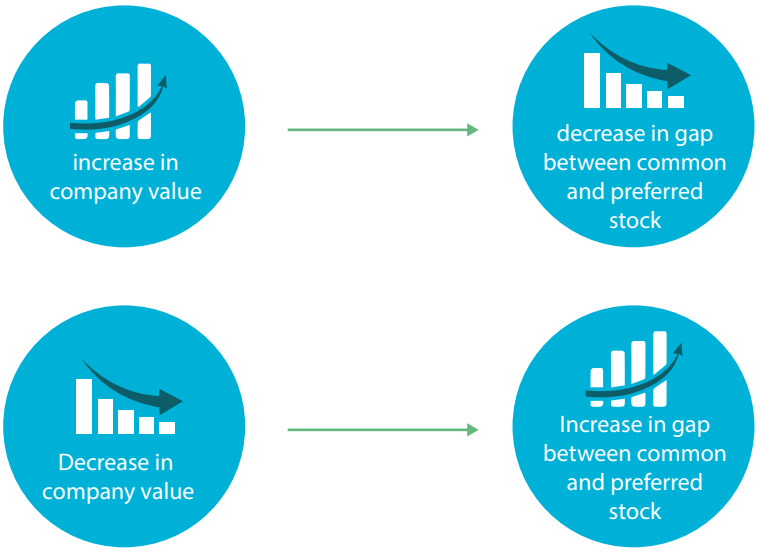
Cap Table	
Series A	1,000,000
Common	3,000,000

Terms	1x Liq Preference Non-Participating	1x Liq Preference Non-Partic, Cumulative Div	1x Liq Preference, Participating	1x Liq Preference, Partic. w/cap	1x Liq Preference, Participating Cumulative Div	1x Liq Preference Partic w/cap Cumulative Div
Liquidation Preference	1x	1x	1x	1x	1x	1x
Participating?	No	No	Yes	Yes	Yes	Yes
Participation Cap?	-	No	No	3.0x	No	3.0x
Cumulative Dividends	No	8%	No	No	8%	8%
Implied Equity Value	$2,712,800	$2,237,038	$1,898,868	$1,949,179	$1,574,805	$1,618,701
Series A	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00
Common	$0.394	$0.236	$0.200	$0.211	$0.125	$0.134
Percent of Preferred	39.4%	23.6%	20.0%	21.1%	12.5%	13.4%

In addition to better economic terms, preferred stockholders often hold various control rights that make them more advantageous than common shares. Some examples of these include voting rights, rights of first refusal, board composition rights, information rights, and rights to participate in future rounds, among others. Because control rights are not directly reflected in most valuation models, additional discounts are often applied to the common stock. One of the most frequently applied discounts is a discount for lack of marketability, which reflects the inability to access a ready market to quickly convert an ownership position to cash.

RATIO OF COMMON TO PREFERRED IN ABSENCE OF A RECENT TRANSACTION—THE IMPACT OF LEVERAGE

Thus far, this article has primarily focused on the situation where preferred stock was recently sold in a fundraise and is, therefore, a known value (i.e., we are backsolving to the preferred stock price and letting the common stock price follow). As a preferred stock transaction becomes dated, and we shift from the Backsolve to other valuation approaches (such as market and income approaches) to estimate the company value, the delta between common and preferred stock value may converge or diverge. The liquidation preference of the preferred stock creates a leverage effect for the common stock making its value more volatile and sensitive to changes in the overall company value. An increase in company value can cause an outsized increase in the value of common stock and narrow the value disparity between common and preferred stock. Conversely, a decrease in value can increase the value disparity between the two. This is conceptually similar to how the equity value in one's home (levered by a mortgage) may double, even if the overall home value increases by just 20%.



CONCLUSION— AN UPDATE TO THE RULES OF THUMB FROM DAYS OF YORE

The reason that common stock is typically worth less than preferred stock in a venture-backed company is based on simple valuation principles – the future per-share value received by a common shareholder may be less than the per-share value received by a preferred shareholder, and these disparities are reflected in the present values of the respective securities. General rules of thumb and comparisons to the results of other company valuations can serve as a helpful reference, but ultimately each company will have a slightly different ratio (and that ratio will change over time). A clear understanding of the applicable valuation inputs that impact the distribution of outcomes, and an accurate reflection of the economic terms of the preferred stock, will ensure a logical and defensible conclusion.

Scalar