**Share and share alike: the maths behind the costs of participation**

Imagine a company raises £7.5m with a pre-money value of £2.5m. This gives a £10m post-money value, with investors holding 75% of the equity and the remaining 25% being held by the founders (assuming of course that the founders were the only shareholders prior to this particular fundraising).

The decision is whether the investors take ordinary shares, 1x non-participating preference shares or 1x participating preference shares.

Let’s work through some scenarios, using the example above, assuming no other investment is made. I’m also assuming that the sale price is net of all fees and there are no options.

**£10m post-money value, 75% owned by investors (£7.5m invested), 25% owned by founders**

When you look at the figures in this example, a number of things become apparent:

As the exit value increases, the returns for non-participating start to track those for ordinary shares. This is not surprising given that the main feature is that is gives downside protection, but no upside double dipping.

Once the investment starts to become successful something curious can be seen. In the example above, the *absolute value* of the uplift in returns for investors, due to having having participating prefs as opposed to non-participating prefs (or ords), is the same (£1.875m) regardless of the exit value. Likewise the bonus on the multiple is the same as well (+0.25x). This is due to the fact that the benefit of having participating prefs is always a function to the amount invested (so you get your money back and then you share the rest) which is the same regardless of the exit value. The actual amount of this uplift (£1.875m) is 25% of £7.5m (the amount invested), which is also the percentage of the company not owned by the investors.

This uplift in returns for investors is mirrored by a corresponding penalty suffered by the founders. The founders are £1.875m worse off, every time, regardless of the exit value.

To make sure this observation isn’t a one off, more scenarios were calculated along three broad themes, each using the example above as a starting point.

**Trend 1** - Investing the same amount of money but with different pre money valuations, so different investor ownership

**Trend 2** - Same post money valuation, investing different amounts and so different investor ownership

**Trend 3** - Same pre money value, investing different amounts and so different post money (and different investor ownership)

The tables of these investment scenarios can be found at the end of this document.

The results came out the same. While the actual figures were dependant on the amount invested and the relative percentage ownerships, the uplift in returns due to having participating prefs was always the same in *absolute value*, regardless of the exit value (as long as the exit value was higher than the post-money value). This uplift was always the same percentage of the amount invested by the investors as the percentage of the company held by the founders. Likewise, the bonus in multiple was the same as the percentage held by the founders.

As with the original example, the uplift in returns to investors is mirrored by a corresponding penalty in the proceeds to the founders. This happens every time, regardless of the scenario or the exit value.

As such, it is more lucrative for investors to take participating prefs if they are investing more money in companies with higher valuations as the uplift in returns (and bonus of multiple) from having these participating prefs will be higher.

Due to the fact that the absolute value of the uplift associated with having preference shares is the same, regardless of exit value, the *marginal* value of this uplift decreases as the exit value increases. So in the example above, the additional £1.875m makes little difference to the £75m returned to investors if the company is sold for £100m. So if there is a super successful exit, the preference makes little if any difference to the returns received by the investors.

**Appendix – Scenario analysis outlining trends of investments.**

**Trend 1 - Investing the same amount of money but with different pre money valuations, so different investor ownership**

**Scenario 1** - £7.5m invested, £2.5m pre money

**£10m post money, 75% owned by investors, 25% owned by founders**£10m exit value indicates hurdle to receive positive returns on investment

**Scenario 2** - £7.5m invested, £7.5m pre money

**£15m post money, 50% owned by investors, 50% owned by founders**£15m exit value indicates hurdle to receive positive returns on investment

**Scenario 3** - £7.5 invested, £22.5m pre money

**£30m post money, 25% owned by investors, 75% owned by founders**£30m exit value indicates hurdle to receive positive returns on investment

**Trend 2 - Same post money valuation, investing different amounts and so different investor ownership**

**Scenario 1** - £7.5m invested, £2.5m pre money

**£10m post money, 75% owned by investors, 25% owned by founders**£10m exit value indicates hurdle to receive positive returns on investment

**Scenario 4** - £5m invested, £5m pre money

**£10m post money, 50% owned by investors, 50% owned by founders**£10m exit value indicates hurdle to receive positive returns on investment

**Scenario 5** - £2.5m invested, £7.5m pre money

**£10m post money, 25% owned by investors, 75% owned by founders**£10m exit value indicates hurdle to receive positive returns on investment

**Trend 3 - Same pre money value, investing different amounts and so different post money (and different investor ownership)**

**Scenario 1** - £7.5m invested, £2.5m pre money

**£10m post money, 75% owned by investors, 25% owned by founders**£10m exit value indicates hurdle to receive positive returns on investment

**Scenario 6** - £5m invested, £2.5m pre money

**£7.5m post money, 67% owned by investors, 33% owned by founders**£7.5m exit value indicates hurdle to receive positive returns on investment

**Scenario 7** - £2.5m invested, £2.5m pre money

**£5m post money, 50% owned by investors, 50% owned by founders**£5m exit value indicates hurdle to receive positive returns on investment

* **Bradley Hardiman, December 2015**