

## Cost of Capital Optimization

**An optimal capital structure is the result of a calibration process and describes a mix of debt, hybrid instruments and equity with a view to maximize a firm's value by minimizing average Cost of Capital (CoC).**

CoC is defined as the cost of the funds used to finance a business, in its crudest form a combination of debt and equity. Whereby company balance sheets may consist of various layers of debt, also of various types of hybrid instruments: These are funding tools sharing characteristics of both, debt and equity. Knowing a firm's CoC is important in running a business, as value will only be generated, once this hurdle rate is exceeded.

CoC is derived from a firm's funding mix, the relative proportion of – usually (just) – debt and equity. In calculating CoC, Cost of Equity (CoE) and Cost of Debt (CoD) must be weighted according to the respective market values of debt and equity - and not according to their relative book values (as per a firm's balance sheet). This seemingly minor aspect is important and often done wrong, though: In deriving CoC, the relative proportions of equity and debt have to be viewed from an investor's perspective – alas: the amount of funds an investor actually contributes or holds as an investment – and not from a mere accounting point of view. – As far as equity is concerned, for instance, investors typically pay more, perhaps even many times a share's book value. The rationale – in simple terms – is that book value is a backward-looking concept and based on numerous sets of regulations (i.e. accounting standards). Investors, such as shareholders, on the other hand, value an asset using different sets of methodologies, foremost by looking at the potential of future expected cash flows.

In narrowing down the corridor for an optimal funding mix to minimize CoC, one may start with the assumption a firm was entirely funded with equity

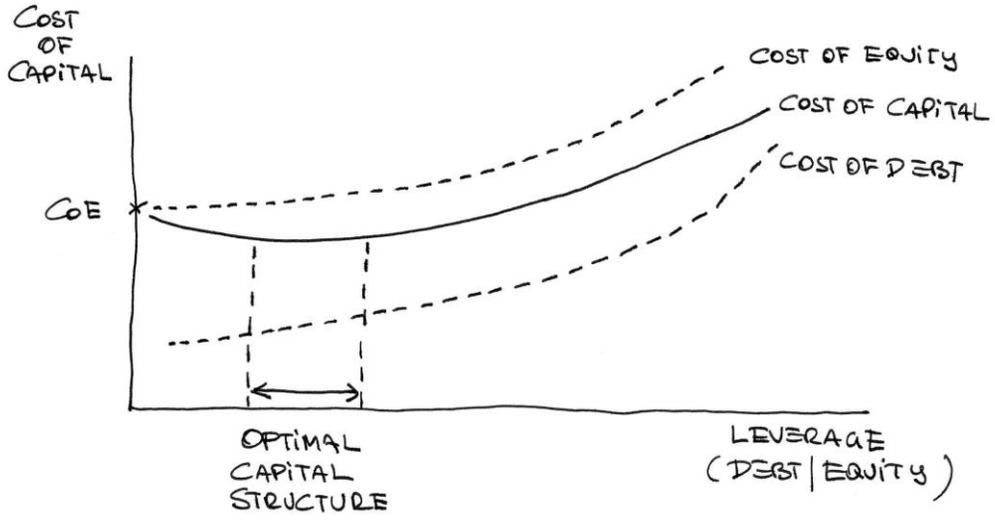
only: In this case, the CoC would simply be that firm's CoE.

Adding debt to its capital structure would – at least up to a certain point – reduce the firm's average CoC, as CoD is lower than CoE. This has to do with the fact that – regardless of a firm's funding mix - the position of a shareholder is always of considerably higher risk than that of a creditor or bondholder. This is best illustrated in the case of a firm's bankruptcy and its subsequent liquidation: Whilst – next to employees, social insurance or the tax authorities - bondholders come first, shareholders will be allocated with what's left, which may be nothing at all.

However, adding merely a small amount of relatively cheaper debt to the overall funding structure will increase both, CoE as well as CoD. – CoE will increase, as with a firm having to pay interest – which is typically a fixed cost component causing additional cash outflows – the firm's net income and cash flows to equity will become more volatile (i.e. risky). And with the beta factor increasing, so will CoE.

But also relatively lower CoD will steadily rise along a firm leveraging up its balance sheet, reflecting an ever enhancing risk of default: Hence, creditors and bond holders will want to be compensated with higher interest rates. Whereby these demands for higher default spreads will be supported by credit rating agencies awarding steadily weaker (lower) credit ratings.

In many cases, a firm's optimal funding mix of debt / equity can be found in a corridor of between 35/65 to 45/55 per cent as per the respective market values of debt and equity. - More tricky is the subsequent step, though: The implementation of such optimal funding mix. This requires a profound understanding of instruments available and entering a dialogue with the appropriate investor clusters to understand their respective expectations and risk-return appetite.



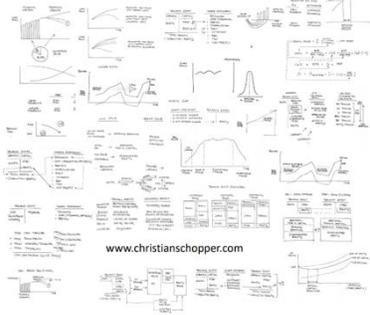
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