

COST OF CAPITAL

Cost of Capital Optimization

An optimal capital structure is the result of an optimal mix of debt, hybrid instruments and equity with a view to maximize a firm's stock price in that overall cost of capital is minimized.

Cost of Capital (CoC) is defined as the cost of the funds used to finance a business, in its crudest form a combination of debt and equity. Sometimes also hybrid instruments are used as funding tools which share 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 overcome.

CoC is derived from a firm's funding mix, the relative proportion of funding of – usually – 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 relative book values. This seemingly minor aspect is important and often done wrong: 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. - In particular as far as equity is concerned, when acquiring shares investors often pay many times their book value: The rationale – in simple terms – is that the book value is a backward-looking figure and based on numerous sets of regulations – the accounting standards -, whilst shareholders value an investment in shares often – among other methodologies - on the basis of future expected cash flows.

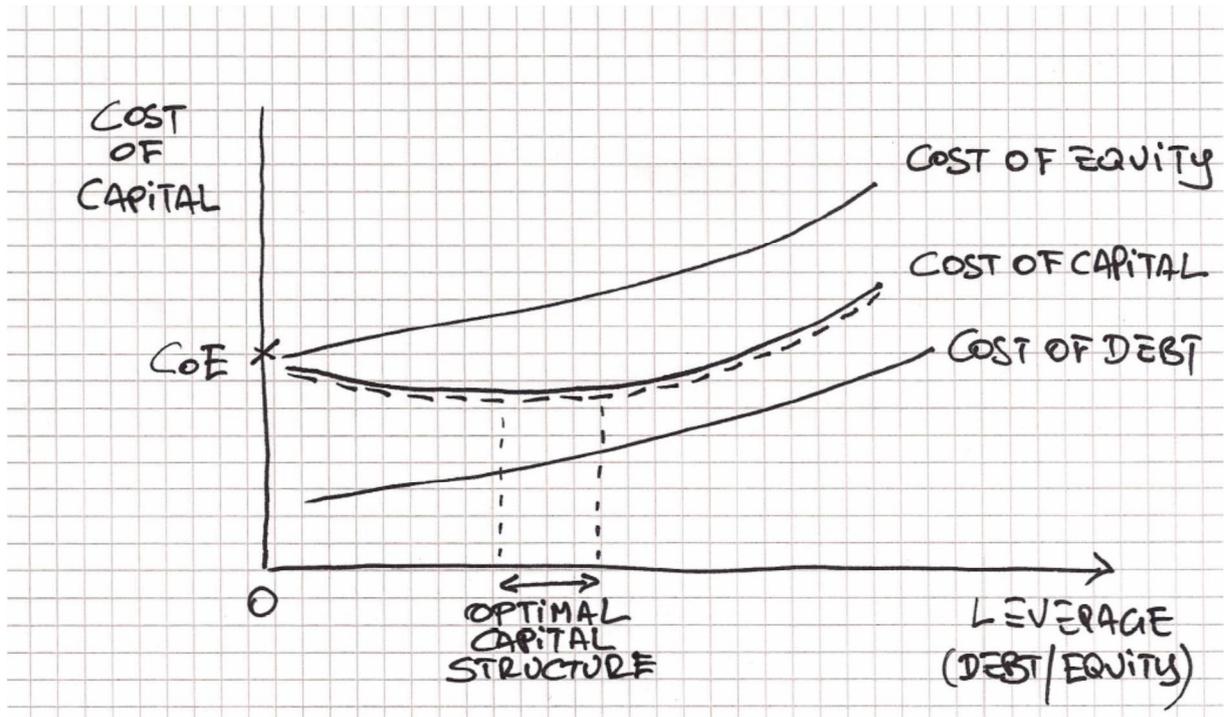
In narrowing down the corridor for an optimal funding mix which minimizes CoC, one could start with the assumption that a firm was entirely funded with equity only: In this case, the CoC would simply be the firm's CoE.

Adding debt to the firm's capital structure would – at least up to a certain point – reduce the overall CoC. The reason for that is simple: As a matter of principle, 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 bond holder. This is best illustrated in the case of a firm's bankruptcy and its subsequent liquidation: Shareholders will be allocated with what's left, which may be nothing at all.

However, adding already a small amount of relatively cheaper debt to the overall funding structure will increase CoE: With the firm having to pay interest – which is usually of fixed cost and causes additional cash out-flows – the firm's net income and cash flows to equity will become more volatile – and hence: risky. And, therefore also the beta factor will increase and eventually drive up CoE.

But also relatively lower CoD will steadily rise along with increasingly leveraging a firm's balance sheet, reflecting its increasing risk of default: As a firm's debt burden increases, creditors and bond holders will want to be compensated with higher interest rates. Also, with more debt added, credit rating agencies will award weaker – alas: lower – credit ratings, and this results in higher risk premiums demanded by fixed income investors, also referred to as: default spreads.

Estimating the corridor of an optimal funding mix within this web of ever increasing CoE and CoD along with adding leverage to a firm's balance sheet is indeed an art. Whilst the starting point – funding a firm with equity only, whereby CoC equals CoE – is given, adding more and more leverage will at one point result in the CoC exceed the CoE of the – at starting point – unlevered balance sheet. In many cases the optimal mix of debt / equity can be found in a corridor of between 35/65 to 45/55 as per the market values of debt and equity. Finding the optimal CoC has to be calculated individually in each case.



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