

Discounted Cash Flow Methodology – Adjusted Present Value

The Adjusted Present Value (APV) approach is an alternative Discounted Cash Flow (DCF) approach whereby the value generated by a target's capital structure is estimated separately.

The rationale behind this approach is the fact that adding debt to fund an asset or a firm generates value. This is due to the Cost of Debt (CoD) being lower than the Cost of Equity (CoE) and, in addition, that interest paid for debt can be deducted for tax purposes. And this lowers a company's tax base, upon which taxes have to be paid (i.e. tax shield).

Now, whilst the standard DCF valuation approach assumes a long-term stable capital structure composed of equity and debt and uses that as a discount factor (WACC), the APV approach dissects the value of adding leverage (i.e. debt) to the proposed investment.

In principle, the cash flow basis is the same in both, the DCF and the APV approach: Future expected Unlevered Free Cash Flows (UFCFs) are being discounted.

However, as the APV takes separate views on the target as far as its stand-alone unlevered state is concerned and then in regards to the upside incurred by its capital structure's leverage, in a first step UFCFs have to be discounted by the CoE only (as if the firm had no debt on its balance sheet). Before doing this, though, the equity beta factor of the firm's CoE would have to be de-levered, as the target – hic! – is assumed to be debt free.

In a subsequent step, the value added of the target's balance sheet (actually being levered) is accounted for: Whereby, the additional value is not only contributed by the fact that the CoD is lower than the CoE. Instead, this stems from the value of the leverage-incurred tax shield. In forecasting this, in a first step each of the firm's anticipated annual interest expenses is multiplied with the applicable marginal tax rate. In a second step, these (annual) tax shields are discounted by the (pre-tax) CoD. The result of this exercise is the accrued value of the tax shield (i.e. tax savings), or by adding leverage to the firm's balance sheet. - Therefore, the APV is especially effective in such cases, where leverage and its related tax implications significantly affect a firm's value, such as in leveraged buyouts.

As mentioned, in achieving correct results, the beta factor of the CoE would have to be unlevered and the marginal (and not the firm's average) tax rate be used. – Further, as the APV is foremost used in assessing the value creation of LBO-related transactions, the initial (possibly – excessively - high) leverage structure of a target firm's balance sheet will over time (have to) get in line with common, average industry standards again. As the APV approach is based on cash flow streams over long-term time horizons, one may therefore adjust for an assumed de-levering of the capital structure in the course of the planning horizon. After this period of de-levering, a long-term stable capital structure can be applied again.

Therefore, one advantage of the APV approach is the enhanced transparency to track the origins of value creation. However, as latter is exclusively in regards to leverage and tax, the APV approach is foremost used in LBO constellations.

STANDARD DCF

$$\frac{UFCF}{WACC}$$

ASSUMING
STABLE
CAPITAL STRUCTURE

APV

$$\frac{UFCF}{CoE} + \frac{TAX SHIELD}{CoD}$$

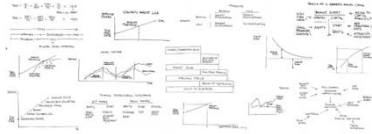
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0 BETA

∇ MARGINAL
0 TAX RATE

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