Discounted Cash Flow Methodology – About Cash Flows

In applying the Discounted Cash Flow (DCF) valuation approach, a firm´s future expected Unlevered Free Cash Flows (UFCFs) are discounted by the Weighted Average Cost of Capital (WACC) to estimate a firm´s Enterprise Value (EV).

When referring to the term Cash Flow (CF) only, then it is actually not entirely clear what may be meant: It could be the Cash Flow from Operations (OCF), the Free Cash Flow (FCF), the UFCF or some other, modified form of CF.

Technically, OCF is generated by a firm´s ordinary business operations: OCF indicates whether sufficient positive cash flow is available to maintain or grow a firm´s operations, or whether external financing may be required. Therefore, OCF focuses on cash in- and outflows related to a firm's main business activities: Selling and purchasing inventory, providing services, paying salaries. Hence, OCF does not include any investing-related activities or financing transactions, which are reported separately. – One may interpret OCF as a cash version of a company's net income (i.e. cash earnings): Accounting standards require net income to be reported on an accrual basis which also accounts for various non-cash items, such as depreciation, amortization or expenses that were incurred but yet not paid for. Hence, OCF can be derived from net income by making adjustments, such as for changes in the working capital-related accounts (foremost for increases or decreases in receivables, payables and a firm´s inventory).

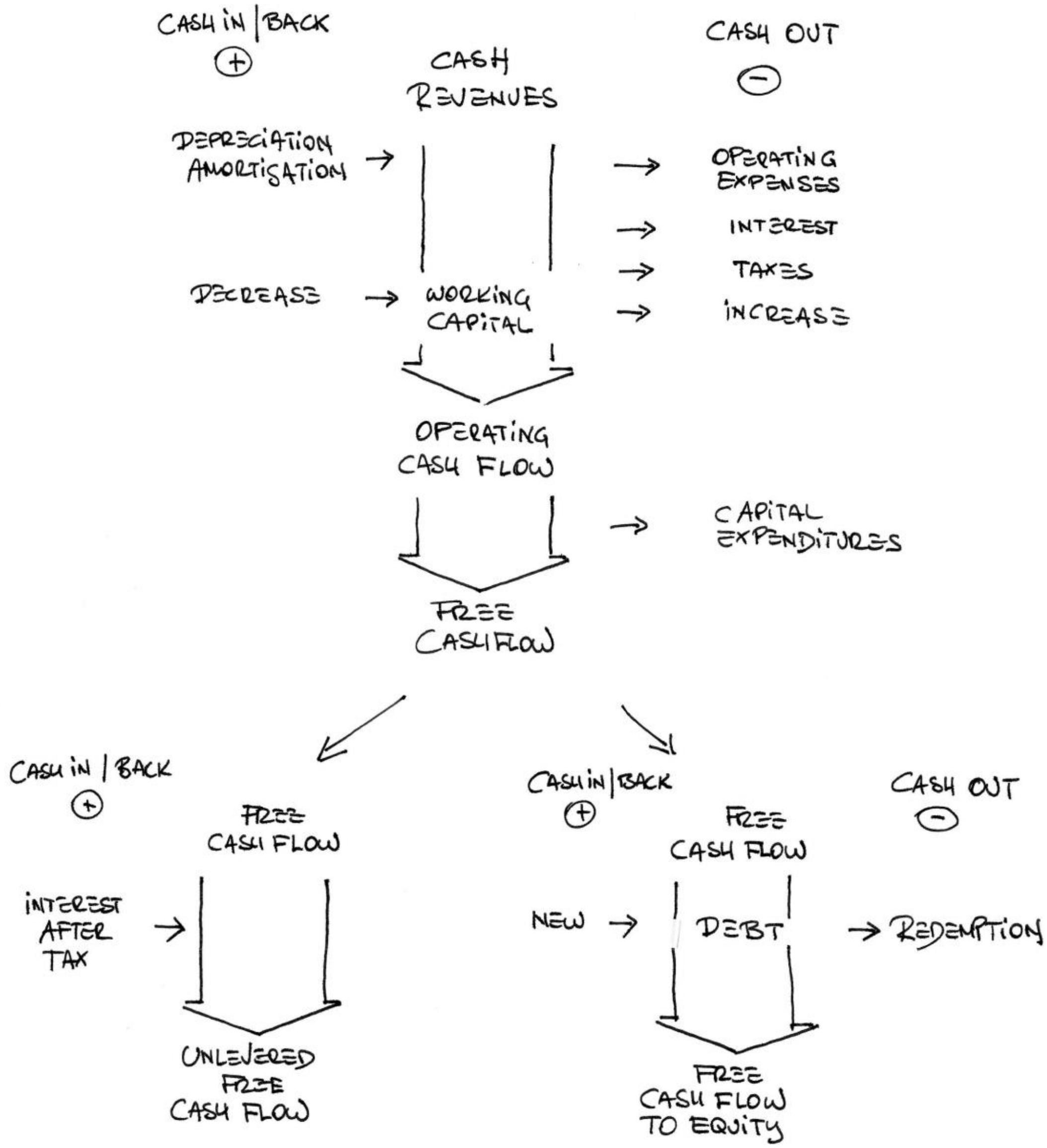
FCF is in essence the OCF after accounting for capital expenditures required and committed to maintain or grow business operations. The term "free" refers to a measure of CF which is available for discretionary spending, not least for potential redemptions of debt principal, if and when due. – As is the case with OCF, also FCF does not include any cash raised or redeemed in financing transactions (e.g. share capital increases, debt redemptions). However, a negative FCF may point towards capital raising requirements.

The calculation of an UFCF – a highly theoretical version of CF - is required to determine a firm´s EV on the basis of the DCF valuation approach. Starting with net income, UFCF is derived by adding back all non-cash cost items and deducting any increase in the net working capital as well as any capital expenditures. Further, however, the UFCF – fictionally - assumes that the enterprise to be valued were unlevered, had not used any debt to support its balance sheet. In this case, the firm would not pay any interest expenses either. However, in assuming this, the firm would now have to pay more taxes, as interest expenses reduce the tax base, therefore also tax payments (i.e. tax shield). In consequence, only the cash costs of interest paid are added back to derive the UFCF. This assumption – removing any CF-related impact due to a firm´s capital structure - is made to allow different firms´ CFs compared fairly in estimating their respective values.

However, as most firms actually do have (at least) some debt on their balance sheets, a long-term stable leverage is assumed in the applied discount factor, the WACC: This factor is derived by weighting cost of equity and debt according to their respective instruments´ market values.

Hence, just referring to a firm´s CF is not sufficient. - Also, in calculating any of the CFs above, it is important know what one is looking for: OCF indicates the soundness of a firm´s operation, but in essence ignores the required fixed asset base (which is more relevant in production-leaning operations, lesser so in service sectors, though). FCF is a good indicator of flexibility, enabling a firm to either pursue growth or reward its investors. Finally, the hypothetical UFCF is applied in assessing a firm´s value via the DCF valuation approach.

NOTE: Frequently, earnings before interest, taxes, depreciation and amortization (EBITDA) as well as earnings before interest and taxes (EBIT) – both of which can either be directly found in or easily derived from a firm´s income statement – are referred to as CF proxies. In fact, whilst OCF already accounts for tax payments as well as the funding of working capital and FCF on top also for capital expenditures, in regards to mature firms EBIT as a proxy for OCF and EBITDA for FCF may come close.


CASH IN | BACK
+
CASH REVENUES
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DEPRECIATION AMORTISATION
OPERATING EXPENSES
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WORKING CAPITAL
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OPERATING CASH FLOW
CAPITAL EXPENDITURES
FREE CASH FLOW
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INTEREST AFTER TAX
UNLEVERED FREE CASH FLOW
CASH IN | BACK
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FREE CASH FLOW
CASH OUT
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NEW
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