

# Capex calculations

## Inputs

### Capex Components:

- Capex
  - Driver
  - Value
  - Due Dates
  - Depreciation Allocation
- Depreciation
  - Method
  - Depreciation Period
  - Depreciation Rate
  - Residual Write-Off
  - Start

## Calculations

### Profit & Loss statement

#### Linear Depreciation

When linear Depreciation is selected, the acquisition value is evenly distributed over the Depreciation Period. When the acquisition value is for example EUR 120'000 and the Depreciation Pe 10 years respective 120 months, the expense is evenly distributed over the 120 months.

		01.2016	02.2016	03.2016	04.2016	05.2016	06.2016	07.2016	08.2016	09.2016	10.2016	11.2016	12.2016	...	
Profit & Loss statement	-120'000	-1'000	-1'000	-1'000	-1'000	-1'000	-1'000	-1'000	-1'000	-1'000	-1'000	-1'000	-1'000	...	-1'000

#### Degressiv Depreciation

When degressiv Depreciation is selected, the Depreciation amount is the product of the book value from the previous period and the Depreciation Rate. When the acquisition value is for exan EUR 120'000 and the Depreciation Rate is 40%, the Depreciation amount in the first year is EUR 48'000. On monthly basis the Depreciation Rate is  $1-(1-0.4)^{(1/12)} = 4.17\%$ . Thus there is a Depreciation amount of EUR 5'001 in the first month. The book value after Depreciation equals EUR 120'000 - EUR 5'001= EUR 114'999. The second month Depreciation amount is EUR 4'7

With degressiv Depreciation method, there is never a book value of 0. Because of that, a Residual Write-Off is made on a defined date. In the following example the Residual Write-Off is after years in December 2025.

		01.2016	02.2016	03.2016	04.2016	05.2016	06.2016	07.2016	08.2016	09.2016	10.2016	11.2016	12.2016	...	
Profit & Loss statement	-120'000	-5'001	-4'793	-4'593	-4'401	-4'218	-4'042	-3'874	-3'712	-3'558	-3'409	-3'267	-3'131	...	-75

#### Immediate Depreciation

When immediate Depreciation is selected, the whole acquisition value is written down on a defined date. When the acquisition value is for example EUR 120'000 and the Due Date is 04.2016 whole acquisition value is written down on this date.

		01.2016	02.2016	03.2016	04.2016	05.2016	06.2016	07.2016	08.2016	09.2016	10.2016	11.2016	12.2016	...	
Profit & Loss statement	-120'000	0	0	0	-120'000	0	0	0	0	0	0	0	0	...	0

#### Appreciation

When Appreciation is selected as method, the Appreciation amount is the product of the book value from the previous period and the Appreciation Rate. When the acquisition value is for exar EUR 120'000 and the Appreciation Rate is 5%, the Appreciation amount in the first year is EUR 6'000. On monthly basis the Appreciation Rate is  $1-(1-0.05)^{(1/12)} = 0.42\%$ . Thus there is an Appreciation amount of EUR 512 in the first month. The book value after Appreciation equals EUR 120'000 + EUR 512= EUR 120'512. The second month Appreciation amount is EUR 514.

		01.2016	02.2016	03.2016	04.2016	05.2016	06.2016	07.2016	08.2016	09.2016	10.2016	11.2016	12.2016
Profit & Loss statement	-120'000	512	514	516	518	521	523	525	527	530	532	534	536

## Cashflow statement

Different Due Dates affect the Cashflow statement. Multiply Due Dates can be defined for Capex, Transaction Expenditures and Construction Loans. On these Due Dates there is a cash drain cash inflow.

When Capex expenditures with an amount of for example EUR 10'000'000 are necessary, these costs can be distributed on different Due Dates. The following table shows the defined Due D

Driver	Value	Unit	Percentage
Transaction	0	Month	60
Transaction	24	Month	25
Transaction	36	Month	15

At Transaction 60% of Capex are due, 24 months later 25% and 36 months after Transaction the remaining 15%.

		12.2015	01.2016	...	11.2017	12.2017	01.2016	...	11.2018	12.2018	01.2019
Cashflow statement	-10'000'000	-6'000'000	0	...	0	-2'500'000	0	...	0	-1'500'000	0

## Balance Sheet

The Balance Sheet gets calculated from the closing Balance Sheet of the previous period and from the difference between the Profit & Loss statement and the Cashflow statement of the actu

$$\text{Balance Sheet}(t) = \text{Balance Sheet}(t - 1) + \text{Profit \& Loss statement}(t) - \text{Cashflow statement}(t)$$

The following example explains this functionality:

		01.2016	02.2016	03.2016	04.2016	05.2016	06.2016	07.2016	08.2016	09.2016	10.2016	11.2016	12.2016
Profit & Loss statement	48	4	4	4	4	4	4	4	4	4	4	4	4
Cashflow statement	48	0	0	12	0	0	12	0	0	12	0	0	12
Balance Sheet		4	8	0	4	8	0	4	8	0	4	8	0

For 06 / 2016 the book value is calculated as follows:

$$\text{Balance Sheet}(06.2016) = 8 + 4 - 12 = 0$$

## Properties

Capex costs can be financed internal or external:

Financial assets can be financed internal or external. Internal financing means that all assets are generated by the company itself. An external financing is an outside financing (Debt funding) or an equity financing (for example a Shareholder Loan).