

# Opex calculations

## Inputs

### Opex Components:

- Account
- Driver
- Value
- Bounds (Floor, Cap)
- Start
- End
- Production Units
- Indexations
- Method of Payment or Payment Date

## Calculations

### Profit & Loss statement

t < Start	t >= Start and t < End	t >= End
Opex = 0	Opex.Profit & Loss statement(t) = Driver x Value	Opex = 0

Indexations help to consider inflation.

When there are yearly expenses with an amount of EUR 24'000, this amount increases because of inflation. The expenses in the first month are EUR 2'000. With an Inflation of 2% and a Inft: Frequency per month the second month expenses are 2'003.30 = EUR 2000 \* (1 + 2%)<sup>1/12</sup>. The Inflation Frequency defines how often the inflation occurs.

		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	-24'219	-2000	-2'003	-2'007	-2'010	-2'013	-2'017	-2'020	-2'023	-2'027	-2'030	-2'033	-2'037

A Cap or/and Floo value can be added to particular Sales and Opex entities. Dependent from a Driver, a Value for the Cap and Floor bounds is defined. The Floor Values are binding, when t or Opex costs are below the Floor Value. The Cap Values are binding, when the Sales or Opex costs are above the Cap Value.

When a Single amount per Production Unit or per Project is used as Sales or Opex driver, the End date should be Start + 1 months to get a "real" single amount. Otherwise the single amount divided through the months between start and end. In this case the Cap/Floor value is compared with the single amount divided by the amount of months.

### Floor

	Floor <= Sales/Opex	Floor > Sales/Opex
Used Value	Sales/Opex	Floor

### Cap

	Cap <= Sales/Opex	Cap > Sales/Opex
Used Value	Cap	Sales/Opex

## Cashflow statement

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### Payment Date (Account = Pre Payment)

When Pre Payment is selected as account, a date has to be set with the help of a Date Choice Box. On this date the expense of the whole Project Lifetime is paid. With an expense of EUR per year and a Project Lifetime of 20 years, the capital drain on the defined date, in this case 01 / 2016, is EUR 18'000 x 20 years = EUR 360'000. When the defined date is before Transaction capital drain will occur at Transaction.

		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	360'000	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	...	1'500
Cashflow statement	360'000	360'000	0	0	0	0	0	0	0	0	0	0	0	...	0

### Payment Date (Account = Provision)

When Provision is selected as account, a date has to be set with the help of a Date Choice Box. On this date the expense of the whole Project Lifetime is paid. With an expense of EUR 18'00 per year and a Project Lifetime of 20 years, the capital drain on the defined date, in this case 12 / 2036, is EUR 18'000 x 20 years = EUR 360'000.

		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	360'000	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	1'500	...	1'500
Cashflow statement	360'000	0	0	0	0	0	0	0	0	0	0	0	0	...	360

## 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 actual period.

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

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

Opex 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).