


# Reserve calculations

## Inputs

### Reserve Components:

- Driver
- Value
- Look Ahead Period (Driver = Next Debt Service)
- Start
- End
- Financing Mode
- Interest
- Method of Payment

## Calculations

<b>Profit &amp; Loss statement</b>	Interest x Reserves.Balance Sheet(t-1)																																																								
<b>Cashflow statement</b>	<ul style="list-style-type: none"> <li>• The Reserve amount is deposited at the Start Date (cash drain) and gets liquidated at the End Date (cash inflow).</li> <li>• The Reserve amount is the percentage value of Debt Service in the Look Ahead Period. Accordingly cash drains and cash inflows take place (Driver = Next Debt Service). Compare example <i>Debt Service</i>.</li> <li>• The Reserve amount yields from the multiplication between the Value input and the installed Power (Driver = Power).</li> </ul> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;">  Unknown macro: 'multi-excerpt-include'         </div>																																																								
<b>Balance Sheet</b>	<p>The Balance Sheet gets calculated from the closing Balance Sheet of the previous period and from the difference between the Profit &amp; Loss statement and the Cashflow statement of the actual period.</p> $\text{Balance Sheet}(t) = \text{Balance Sheet}(t - 1) + \text{Profit \& Loss statement}(t) - \text{Cashflow statement}(t)$ <p>The following example explains this functionality:</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th></th> <th>01.2016</th> <th>02.2016</th> <th>03.2016</th> <th>04.2016</th> <th>05.2016</th> <th>06.2016</th> <th>07.2016</th> <th>08.2016</th> <th>09.2016</th> <th>10.2016</th> <th>11.2016</th> <th>12.2016</th> </tr> </thead> <tbody> <tr> <td>Profit &amp; Loss statement</td> <td>48</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> </tr> <tr> <td>Cashflow statement</td> <td>48</td> <td>0</td> <td>0</td> <td>12</td> <td>0</td> <td>0</td> <td>12</td> <td>0</td> <td>0</td> <td>12</td> <td>0</td> <td>0</td> <td>12</td> </tr> <tr> <td>Balance Sheet</td> <td></td> <td>4</td> <td>8</td> <td>0</td> <td>4</td> <td>8</td> <td>0</td> <td>4</td> <td>8</td> <td>0</td> <td>4</td> <td>8</td> <td>0</td> </tr> </tbody> </table> <p>For 06 / 2016 the book value is calculated as follows:</p> $\text{Balance Sheet}(06.2016) = 8 + 4 - 12 = 0$			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
		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																																												

## Properties

Reserves 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).

## Debt Service Example

If a Reserve entity has Next Debt Service as Driver, the percentage value of Debt Service in the defined Look Ahead Period is deposited as Reserve.

If Debt is issued for example on the 31.12.2015 with a Loan Period of 10 years, Interests of 5% and yearly linear Redemptions, with a Debt Service of 50% and 12 months Look Ahead Period the following example yields:

Debt		12.2015	01.2016	01.2017	01.2018	01.2019	01.2020	01.2021	01.2022	01.2023	01.2024	01.2025
Profit & Loss statement	-550'000	0	100'000	90'000	80'000	70'000	60'000	50'000	40'000	30'000	20'000	10'000
Cashflow statement	-550'000	2'000'000	-300'000	-290'000	-280'000	-270'000	-260'000	-250'000	-240'000	-230'000	-220'000	-210'000
Balance Sheet		-2'000'000	-1'800'000	-1'600'000	-1'400'000	-1'200'000	-1'000'000	-800'000	-600'000	-400'000	-200'000	0

The Debt Service, composed of Redemption and Interest payments, yields the Cashflow statement. With a Debt Service of 50% the following Reserve amount yield:

Debt Service		12.2015	01.2016	01.2017	01.2018	01.2019	01.2020	01.2021	01.2022	01.2023	01.2024	01.2025
Profit & Loss statement	0	0	0	0	0	0	0	0	0	0	0	0
Cashflow statement	0	-150'000	5'000	5'000	5'000	5'000	5'000	5'000	5'000	5'000	5'000	105'000
Balance Sheet		150'000	145'000	140'000	135'000	130'000	125'000	120'000	115'000	110'000	105'000	0

With the Debt issuing a Reserve entity with 50% of Debt Service of the following year is deposited. Based on a yearly decreasing Debt Service the Reserve decreases as well during the Loan Period. When the Debt is refund the Reserve can be liquidated completely.