

**How-to Guide  
SAP NetWeaver '04**



**How To...  
Calculate  
balance sheet  
key figures  
using the BEx  
Query Designer  
cell editor**

**Version 1.00 – December 2004**

**Applicable Releases:  
SAP NetWeaver '04  
(BW 3.5)**

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# 1 Business Scenario

This document describes how you can define and calculate balance sheet key figures using the cell editor tool of the SAP BW BEx Query Designer.

With release BI Content 3.5.3 Add-On you can find an example query for the *Cash Flow Statement* (technical name 0FIGL\_VC1\_Q0002), which contains numerous balance sheet key figures (e.g. depreciation, changes to payables). A simplified copy of this example query will be used to illustrate the step by step solution in section 3 of this document.

## Example: Cash Flow Statement

The cash flow statement delivers a key figure that evaluates the cash flow and cash holdings of a company. This key figure shows where a company's funds have been accrued, where they have been spent, and which investment and financing measures have been executed.

	Reporting Periods 001.2001 until 016.2001	Comparison Periods 001.2000 until 016.2000
Result	1.833.854.893,84 EUR	1.508.581.166,34 EUR
Depreciation	3.768.817,00 EUR	4.836.337,10 EUR
Increase of Reserves	278.047.220,92 EUR	0,00
Decrease of Reserves	0,00	-396.158,41 EUR
Changes to Inventories and Receivables	63.408.633,58 EUR	5.000.731.419,84 EUR
Changes to Payables	-6.280.214,70 EUR	49.592,80 EUR
Operating Cash Flow	2.172.799.350,64 EUR	6.513.802.357,67 EUR

## 2 Introduction

This example query portrays the cash flow statement in two different reporting time frames. The reporting time frames are drilled down in the columns. The balance sheet key figures for the cash flow statement are calculated using the cell editor of the BEx Query Designer and drilled down in the report rows.

The cash flow statement is created for one company code, which has to be entered by means of a variable.

### Important Notes:

1. This query is based on the analysis scenario [Financial Statements in the SAP BW System](#). The query uses the virtual InfoCube *General Ledger: Financial Statements* (technical name 0FIGL\_VC1) and the characteristic *Financial Statement Item* (technical name 0GLACCEXT) to calculate balance sheet key figures.
2. This query is based on the financial statement version *Commercial Balance Sheet* (technical name INT), which is delivered with the SAP R/3 System (Financials) as a Customizing template. So that the query can be executed without producing errors, the financial statement version *Commercial Balance Sheet* (technical name INT) has to be loaded into the BW system as a hierarchy for the InfoObject *Financial Statement* (technical name 0GLACCEXT).

3. Financial statements other to that delivered by SAP (*Commercial Balance Sheet*; technical name INT), can be applied in customer systems. Therefore this query serves as an example and a template to demonstrate the technical realization of balance sheet key figures in the SAP BW system. In particular, cell calculation (cell reference and formulas) is used in the BEx Query Designer.
4. Customer-defined queries for balance sheet key figures can be created in the customer system using this example.
5. Select parameter VCCUBE\_0FIGL\_VC1\_SEL in table RSADMIN. To do this, use report SAP\_RSADMIN\_MAINTAIN and observe SAP Note 606445.

### 3 The Step By Step Solution

This section describes the definition of an example query, which is based on InfoCube 0FIGL\_VC1 and on characteristic 0GLACCEXT to calculate balance sheet key figures. This query displays the cash flow statement in two different reporting period intervals, which are drilled down in the columns. The balance sheet key figures for the cash flow statement are drilled down in the report rows.

The Step By Step solution is divided in two major sections:

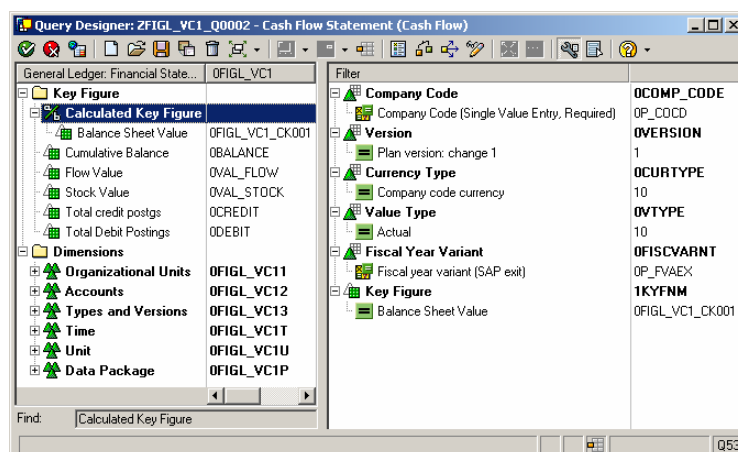
- The first section describes the definition of filter, free characteristics, columns, and rows of the *Cash Flow Statement* query.
- The second section illustrates the usage of the BEx Query Designer cell editor to calculate (using cell references and formulas) changes of balance sheet key figures from one reporting period to another.

#### BEx Query Designer: Definition of filter, free characteristics, columns, and rows

##### 1. Filter

The fundamental characteristics of the virtual InfoCube 0FIGL\_VC1 are restricted by the filter of the example query. Therefore, they cannot be changed after query selection. Especially, the example query is restricted to a single value of the InfoObject *Company Code* (0COMP\_CODE), which has to be entered by means of the variable 0P\_COCD.

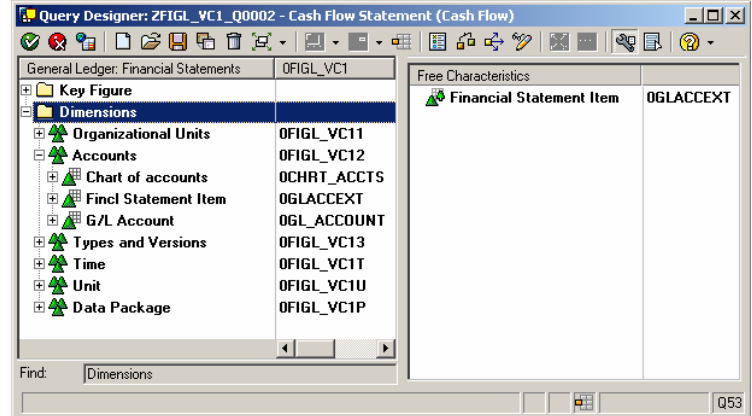
The key figure of the example query is also selected in the filter. The calculated key figure *Balance Sheet Value* (0FIGL\_VC1\_CK001) is the only one used in the query and will be restricted by the row definition and cell calculations in section 3.2.



## 2. Free Characteristics

For free characteristics the InfoObject *Financial Statement Item* (0GLACCEXT) is used with active display hierarchy, see *Properties* in the context menu (next step 2.1.).

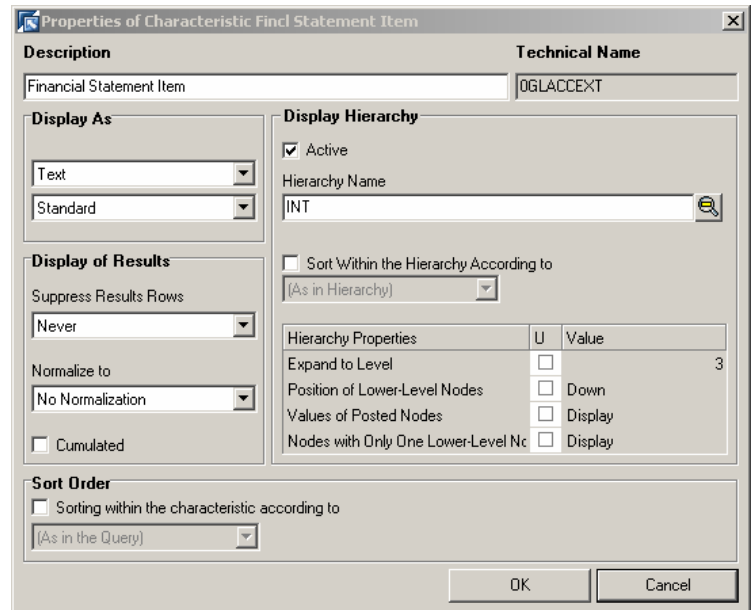
Be aware that this is the only InfoObject, which supports the analysis scenario *Financial Statements in the SAP BW System* together with the virtual InfoProvider 0FIGL\_VC1.



### 2.1. Properties of characteristic “Financial Statement Item” (0GLACCEXT)

The example query is based on the financial statement version *Commercial Balance Sheet* (technical name INT), which serves as active display hierarchy of the free characteristic 0GLACCEXT (see *important notes* in section 2 *Introduction* of this document).

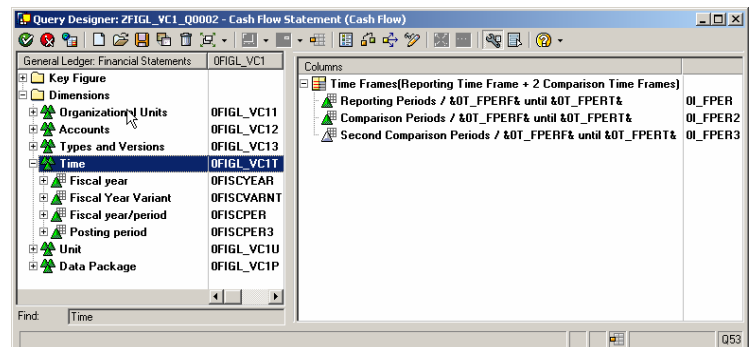
Some nodes of this hierarchy will be used for the definition of basic balance sheet key figures within the rows of the query.



## 3. Columns

Two reporting time intervals are compared in the columns of the query.

Create a structure *Time Frames* in the columns part of the BEx Query Designer. Using the context menu of this structure, create 3 selections for the columns of the query. Details can be found in the next steps (3.1. to 3.3.).

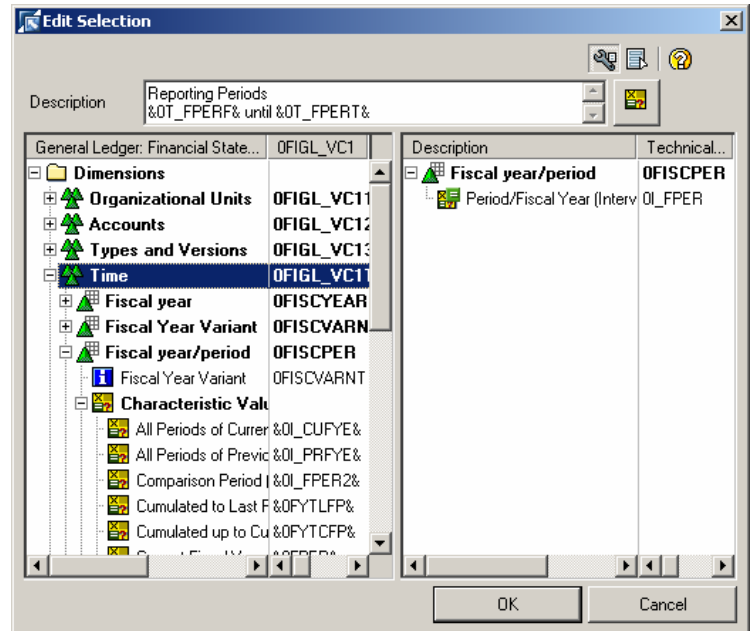


### 3.1. Column Reporting Periods

Use context menu of structure *Time Frames* to create new selection *Reporting Periods*.

In field *Description*, choose text variable *&OT\_FPERF&* and *&OT\_FPERT&* to display the period interval boundaries at the column header.

Make a selection for time characteristic *Fiscal year/period* (OFISCPER) and restrict this characteristic using the variable *0I\_FPER* (drag and drop variable *0I\_FPER* from the list of *Characteristic Value Variables* of OFISCPER to the right side).

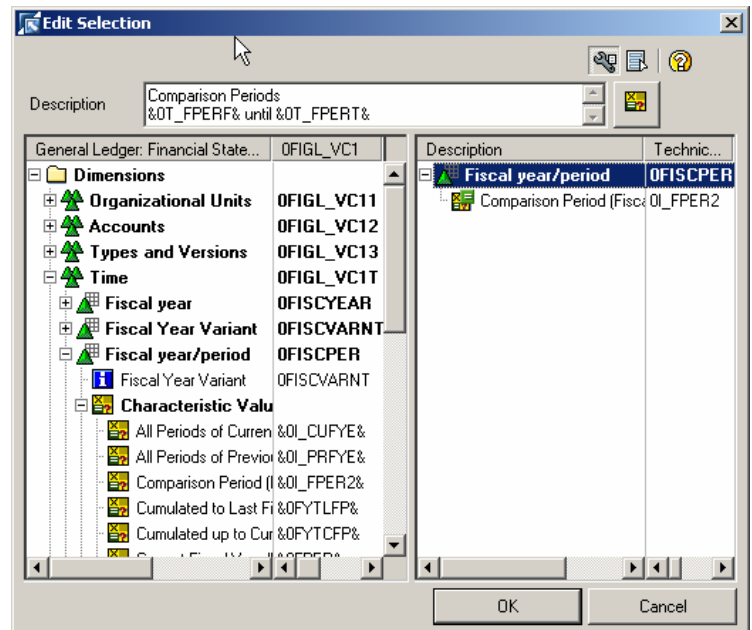


### 3.2. Column Comparison Periods

Use context menu of structure *Time Frames* to create new selection *Comparison Periods*.

In field *Description*, choose text variable *&OT\_FPERF&* and *&OT\_FPERT&* to display the period interval boundaries at the column header.

Make a selection for time characteristic *Fiscal year/period* (OFISCPER) and restrict this characteristic using the variable *0I\_FPER2* (drag and drop variable *0I\_FPER2* from the list of *Characteristic Value Variables* of OFISCPER to the right side).



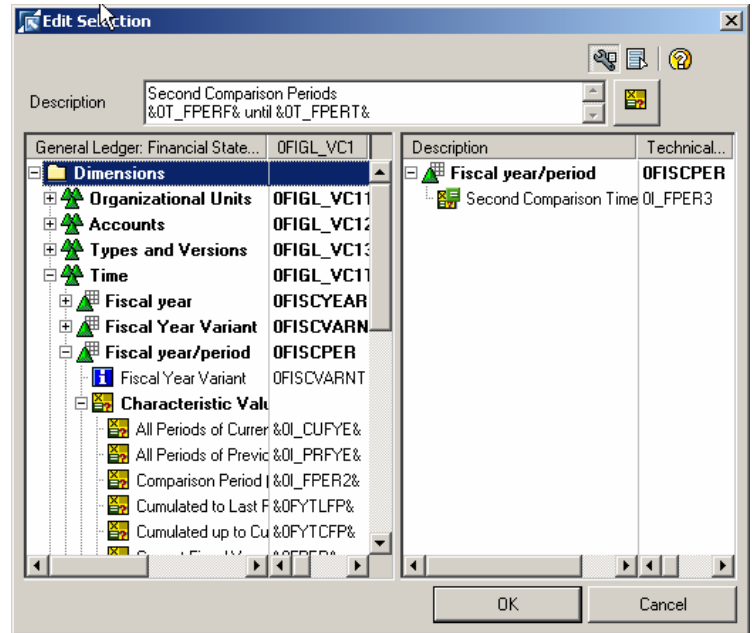
### 3.3. Column Second Comparison Periods

Use context menu of structure *Time Frames* to create new selection *Second Comparison Periods*.

In field *Description*, choose text variable `&OT_FPERF&` and `&OT_FPERT&` to display the period interval boundaries at the column header.

Make a selection for time characteristic *Fiscal year/period* (OFISCPER) and restrict this characteristic using the variable `0I_FPER3` (drag and drop variable `0I_FPER3` from the list of *Characteristic Value Variables* of OFISCPER to the right side).

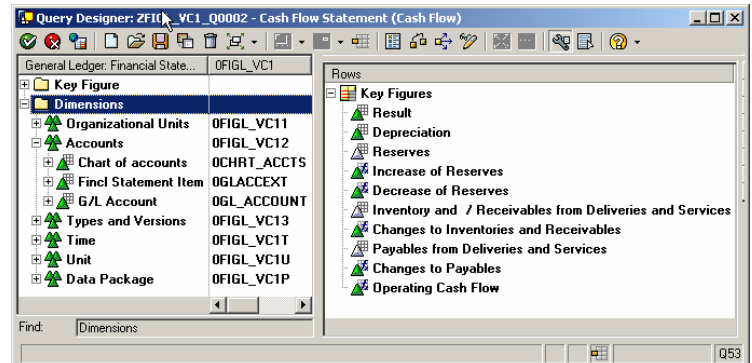
The column *Second Comparison Periods* only serves as difference formation for the report cells calculated. Therefore, it should be hidden at query runtime. In the BEx Query Designer display the context menu of this column and choose function *Properties*. In the following *Properties popup* find the field *Display* → *Hide* and choose the value *Hide (Can be shown)* from the drop-down box.



### 4. Rows (overview)

The balance sheet key figures for the cash flow statement are calculated using the cell editor of the BEx Query Designer and drilled down in the report rows.

Create a structure *Key Figures* in the rows part of the BEx Query Designer. Using the context menu of this structure, create a selection or a formula for each row of the query. Details can be found in the next steps (4.1. to 4.4.).



#### 4.1. Basic balance sheet key figures

Basic balance sheet key figures are defined by selections with regard of the characteristic *Financial Statement Item* (0GLACCEXT). One or several nodes of the hierarchy *Commercial balance sheet* (INT) are selected.

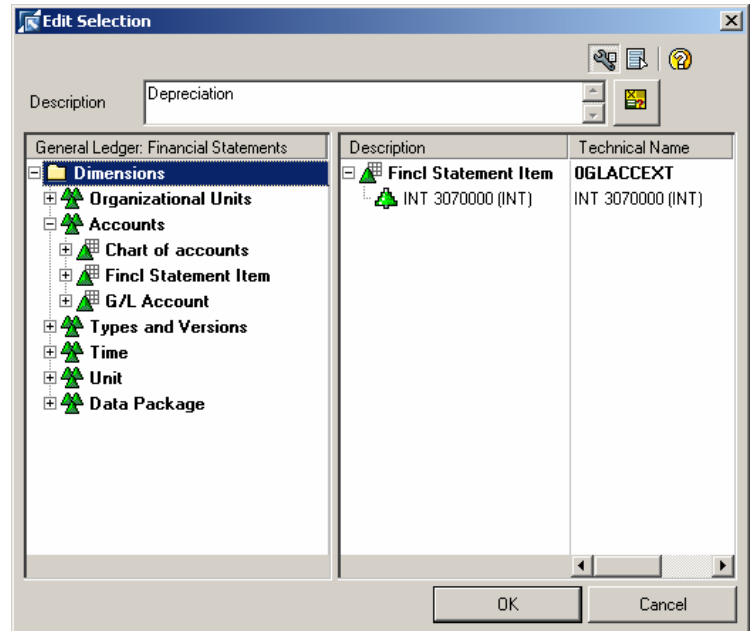
Example *Depreciation*:

Use context menu of structure *Key Figures* to create new selection *Depreciation*. Make a selection (drag and drop InfoObject 0GLACCEXT to the right side) for characteristic *Financial Statement Item* (0GLACCEXT). Use function *restrict* on the context menu of the InfoObject 0GLACCEXT to restrict this characteristic to node *Depreciation* (key 3070000) of the hierarchy *Commercial balance sheet* (INT).

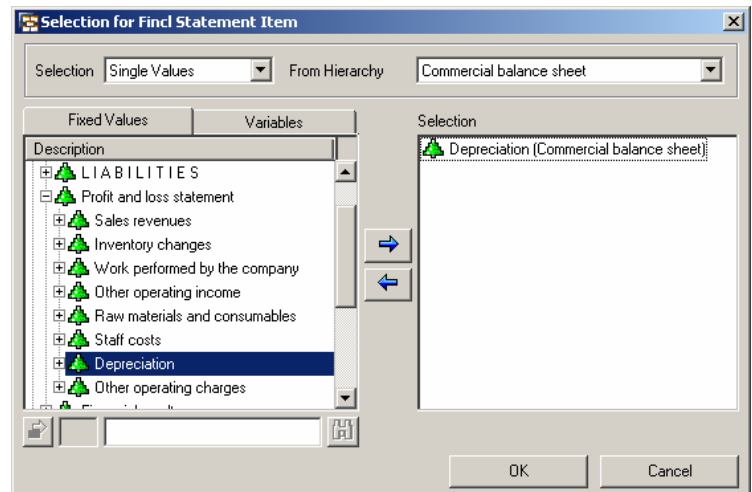
Other basic balance sheet key figures of the example query:

- *Result*: node 0PLPROFIT
- *Reserves*: node 2030000
- *Inventory and Receivables from Deliveries and Services*: nodes 1041000 and 1042000
- *Payables from Deliveries and Services*: node 2044000

The rows *Reserves*, *Inventory and Receivables from Deliveries and Services*, and *Payables from Deliveries and Services* only serve as difference formations for the report cells calculated. Therefore, they should be hidden at query runtime. In the BEx Query Designer display the context menu of these rows and choose function *Properties*. In the following *Properties popup* find the field *Display* → *Hide* and choose the value *Hide (Can be shown)* from the drop-down box.



Context menu of characteristic 0GLACCEXT → *Restrict*



#### 4.2. Differences of basic balance sheet key figures

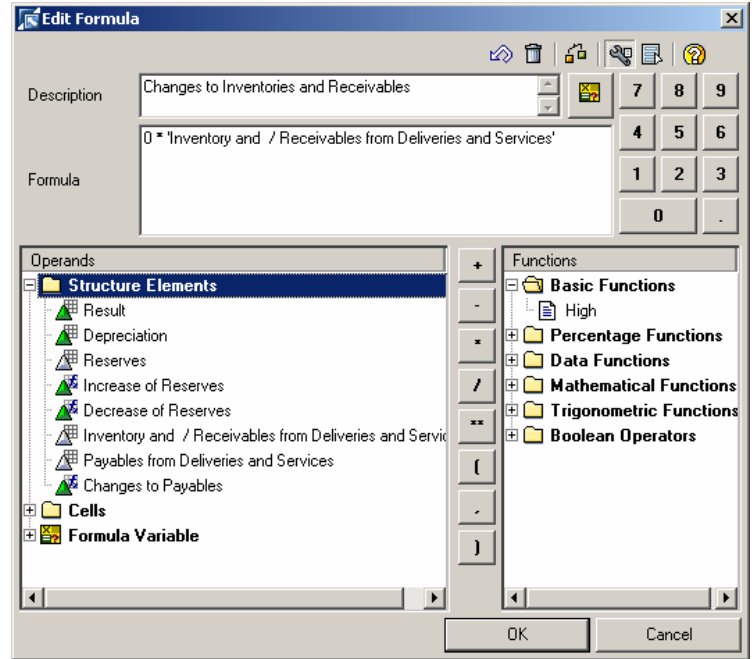
The rows corresponding to differences of basic balance sheet key figures have to be defined as placeholders. The values will be calculated using the BEx Query Designer cell editor.

Example *Changes to Inventories and Receivables*:

Use context menu of structure *Key Figures* to create a new formula *Changes to Inventories and Receivables*. Define the formula the following way:

0 \* 'Inventories and Receivables from Deliveries and Services'

The row *Changes to Payables* can be defined analogously.



#### 4.3. Increase / decrease of basic balance sheet key figures

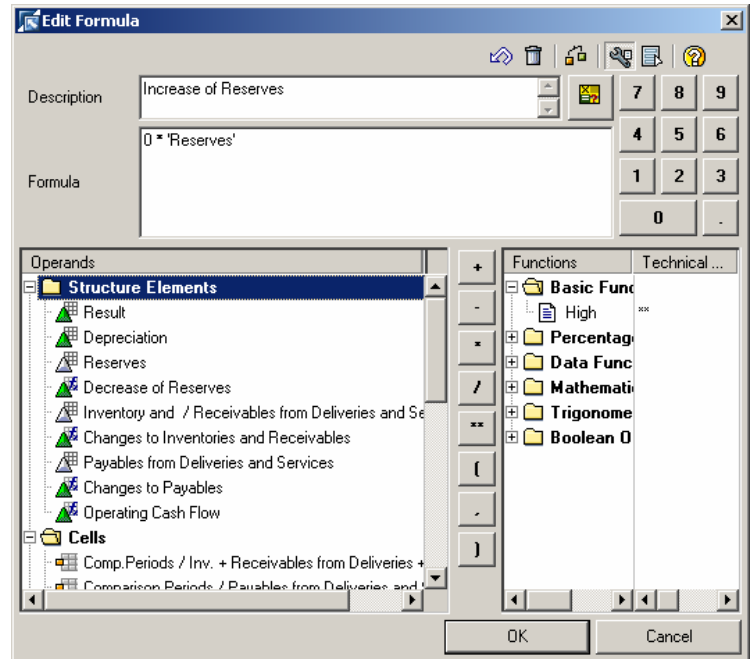
The rows corresponding to increase / decrease of basic balance sheet key figures have to be defined as placeholders. The values will be calculated using the BEx Query Designer cell editor.

Example *Increase of Reserves*:

Use context menu of structure *Key Figures* to create a new formula *Increase of Reserves*. Define the formula the following way:

0 \* 'Reserves'

The row *Decrease of Reserves* can be defined analogously.

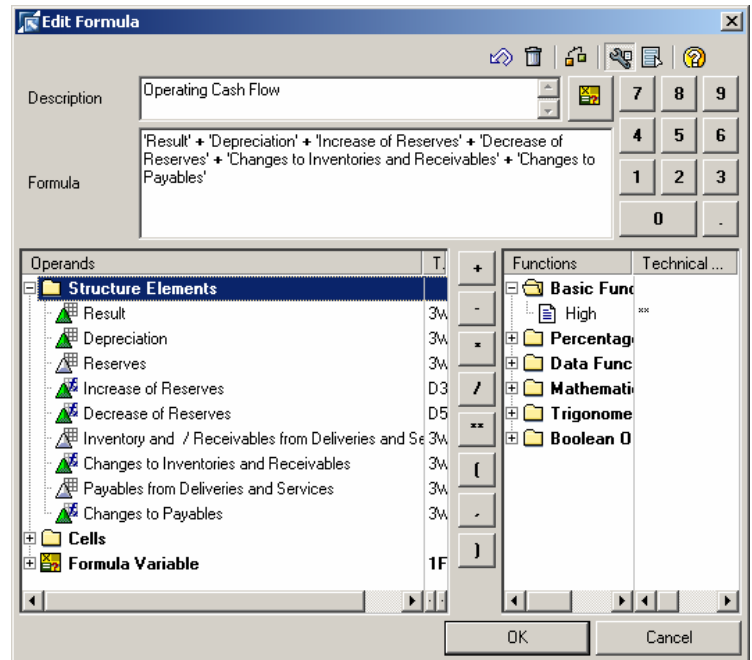


#### 4.4. Totals

Totals and subtotals are calculated using formulas.

Use context menu of structure *Key Figures* to create a new formula *Operating Cash Flow*. Define the formula the following way:

'Result' + 'Depreciation' + 'Increase of Reserves' + 'Decrease of Reserves' + 'Changes to Inventories and Receivables' + 'Changes to Payables'



## BEx Query Designer: Cell Editor (using cell references and formulas)

### 5. Overview

Start the BEx Query Designer cell editor by clicking the button *Define Cells*. A table will be shown, which is built up by the columns and rows defined during the previous steps (columns: reporting periods, rows: balance sheet key figures). Initially, the cells of the table are empty and have to be filled the way as depicted below.

Left two columns of the cell editor:

	Reporting Periods / &OT_FPERF& until &OT_FPERT&	Compari...	Second...
Result			
Depreciation			
Reserves	Reporting Periods / Reserves	Compariso...	Second C...
Increase of Reserves	Reporting Periods / Increase of Reserves	Compariso...	
Decrease of Reserves	Reporting Periods / Decrease of Reserves	Compariso...	
Inventory and / Receivables from Deliveries and Services	Rep. Periods / Inv. + Receivables from Deliveries + Services	Comp.Peri...	Second C...
Changes to Inventories and Receivables	Reporting Periods / Changes to Inventories and Receivables	Compariso...	
Payables from Deliveries and Services	Reporting Periods / Payables from Deliveries and Services	Compariso...	Second C...
Changes to Payables	Reporting Periods / Changes to Payables	Compariso...	
Operating Cash Flow			


Right two columns of the cell editor

	Reporti...	Comparison Periods / &OT_FPERF& until &OT_FPERT&	Second Comparison Periods / &OT_FPERF& until &OT_FPERT&
Result			
Depreci...			
Reserves	Reporting ...	Comparison Periods / Reserves	Second Comparison Periods / Reserves
Increas...	Reporting ...	Comparison Periods / Increase of Reserves	
Decrea...	Reporting ...	Comparison Periods / Decrease of Reserves	
Invento...	Rep. Peri...	Comp.Periods / Inv. + Receivables from Deliveries + Services	Second Comp.Periods / Inv. + Recs from Deliveries + Services
Change...	Reporting ...	Comparison Periods / Changes to Inventories and Receivables	
Payable...	Reporting ...	Comparison Periods / Payables from Deliveries and Services	Second Comp. Periods / Payables from Deliveries and Services
Change...	Reporting ...	Comparison Periods / Changes to Payables	
Operati...			

#### 5.1. Cell References

Using the context menu on a cell of the table above to define a cell reference via function *New Cell Reference*.

After the definition of each cell reference give them a unique description (column name / row name), so that the cell references can be identified more easily. The description of a cell reference can be changed using the context menu via function *Properties*.

In the table above, all cell references are marked by the following icon: 

Properties of cell reference *Reporting Periods/Reserves*:

Properties of the Selection/Formula	
<b>Description</b>	
Reporting Periods / Reserves	
<b>Display</b>	
Highlighting	Hide
No Highlighting	Always Show
OK	
Cancel	


## 5.2. Differences of basic balance sheet key figures

In order to calculate changes of basic balance sheet key figures, use the function *New Formula* of the context menu of the corresponding table cell. The previously defined cell references are used as operands of the formulas.

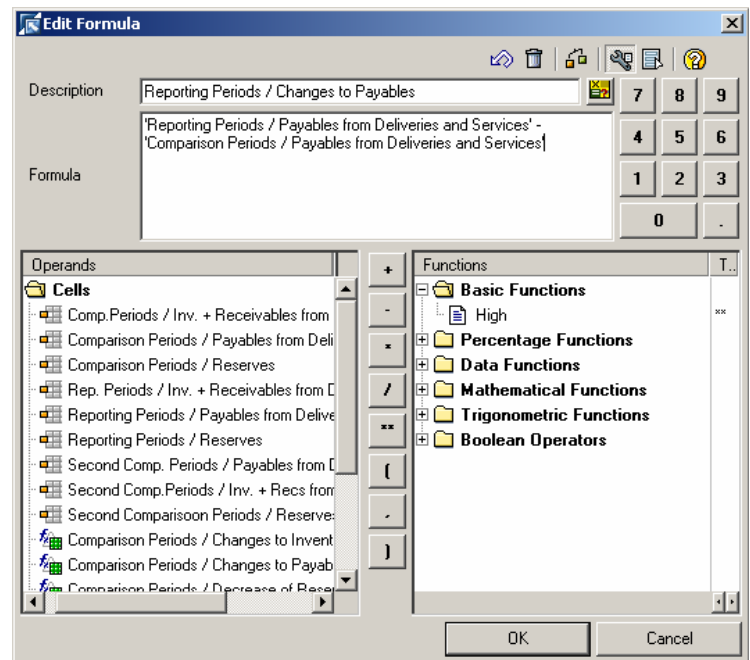
Again, give them a unique description (column name / row name), so that the formulas can be identified more easily.

See examples on the right side.

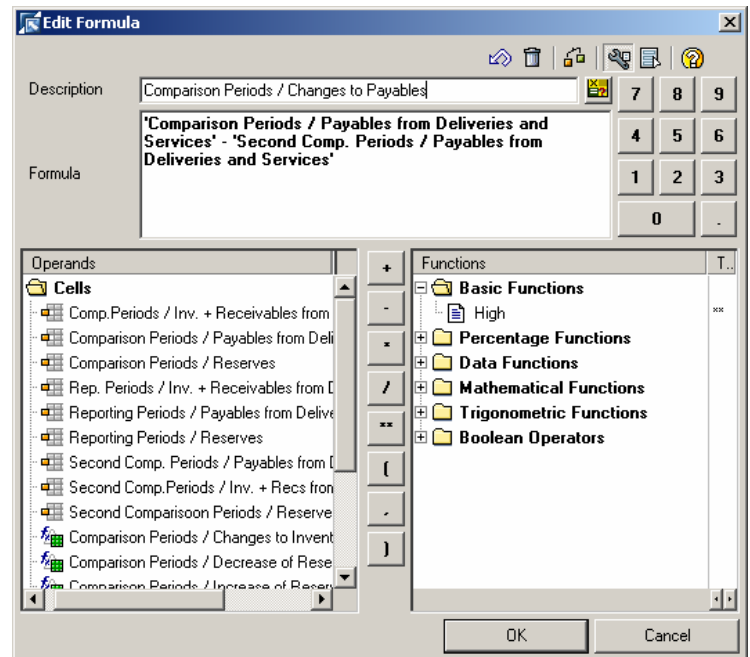
- For the column *Reporting Periods*, each formula calculates the difference:  
 'Reporting Periods / <Row Key Figure>' – 'Comparison Periods / <Row Key Figure>'
- For the column *Comparison Periods*, each formula calculates the difference:  
 'Comparison Periods / <Row Key Figure>' – 'Second Comparison Periods / <Row Key Figure>'

In the table above, all formulas are marked by the following icon: 

Formula *Reporting Periods / Changes to Payables*



Formula *Comparison Periods / Changes to Payables*




### 5.3. Increase / decrease of basic balance sheet key figures

In order to calculate increases / decreases of basic balance sheet key figures, use the function *New Formula* of the context menu of the corresponding table cell. The previously defined cell references are used as operands of the formulas.

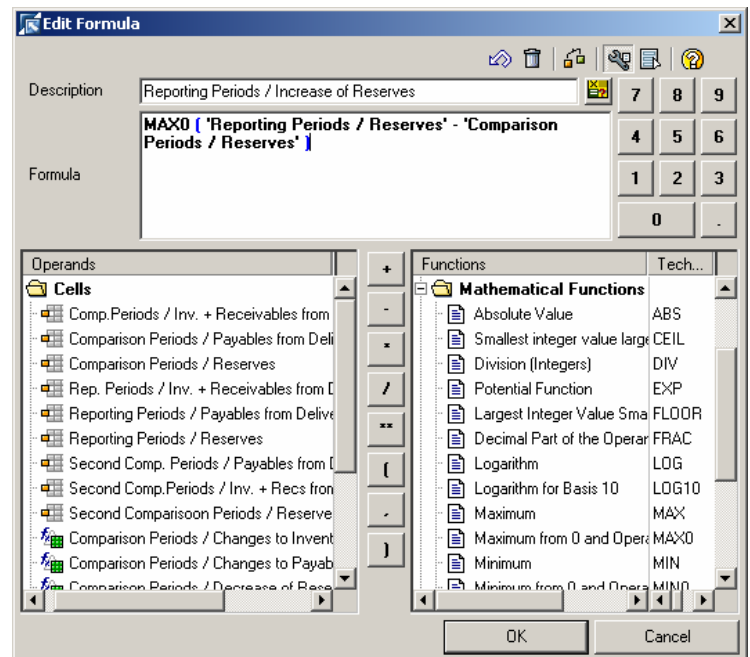
Again, give them a unique description (column name / row name), so that the formulas can be identified more easily.

See examples on the right side.

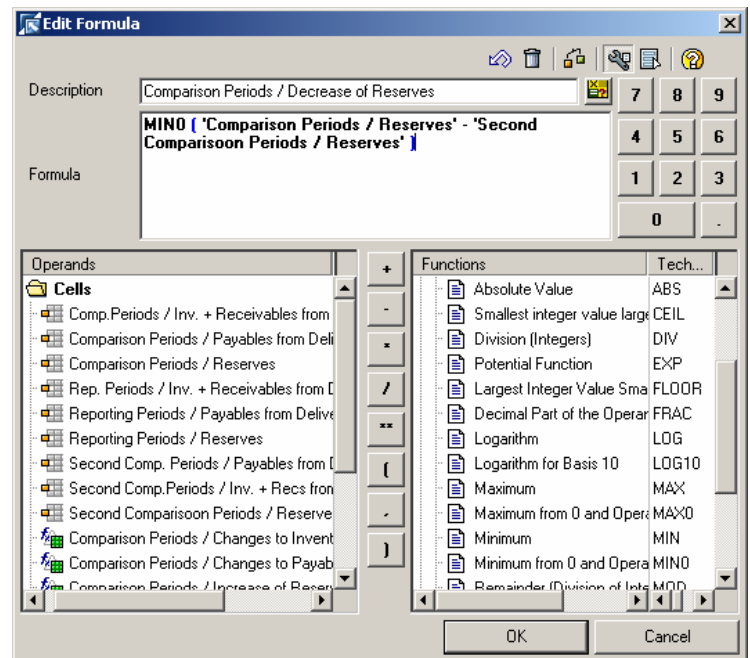
- For the column *Reporting Periods*, each formula calculates the difference:  
 'Reporting Periods / <Row Key Figure>' – 'Comparison Periods / <Row Key Figure>'
- For the column *Comparison Periods*, each formula calculates the difference:  
 'Comparison Periods / <Row Key Figure>' – 'Second Comparison Periods / <Row Key Figure>'
- For increases of balance sheet key figures, these differences are the operand of the mathematical function *Maximum from 0 and Operand* (MAX0). For decreases the mathematical function *Minimum from 0 and Operand* (MIN0) is used.

In the table above, all formulas are marked by the following icon: 

Formula *Reporting Periods / Increase of Reserves*



Formula *Comparison Periods / Decrease of Reserves*



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