User Manual for the graphomate slope graphs 1.4
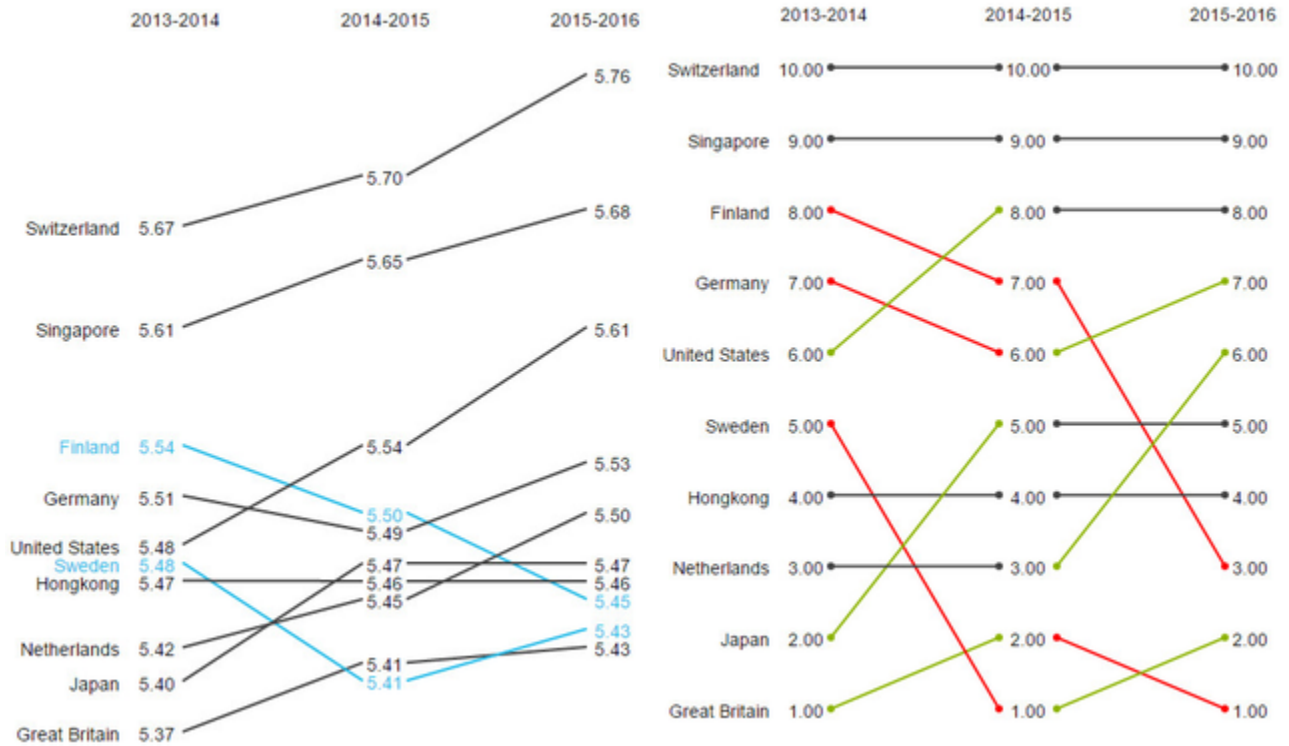
for SAP BusinessObjects Design Studio

Version 1.4 – As of January 2017

https://www.graphomate.com

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Introduction

Slope graphs were established at the beginning of the eighties by Edward Tufte in his standard work "The Visual Display of Quantitative Information". Just as its alternative designation - *table-chart* - the name gives a good impression of what is at stake with *slope graphs*: The data is shown as in a table, but in such a way that numerical values must not be "read", but visually interpreted.

This is the original *table-Chart* on pages 158-159 of Edward Tufte:
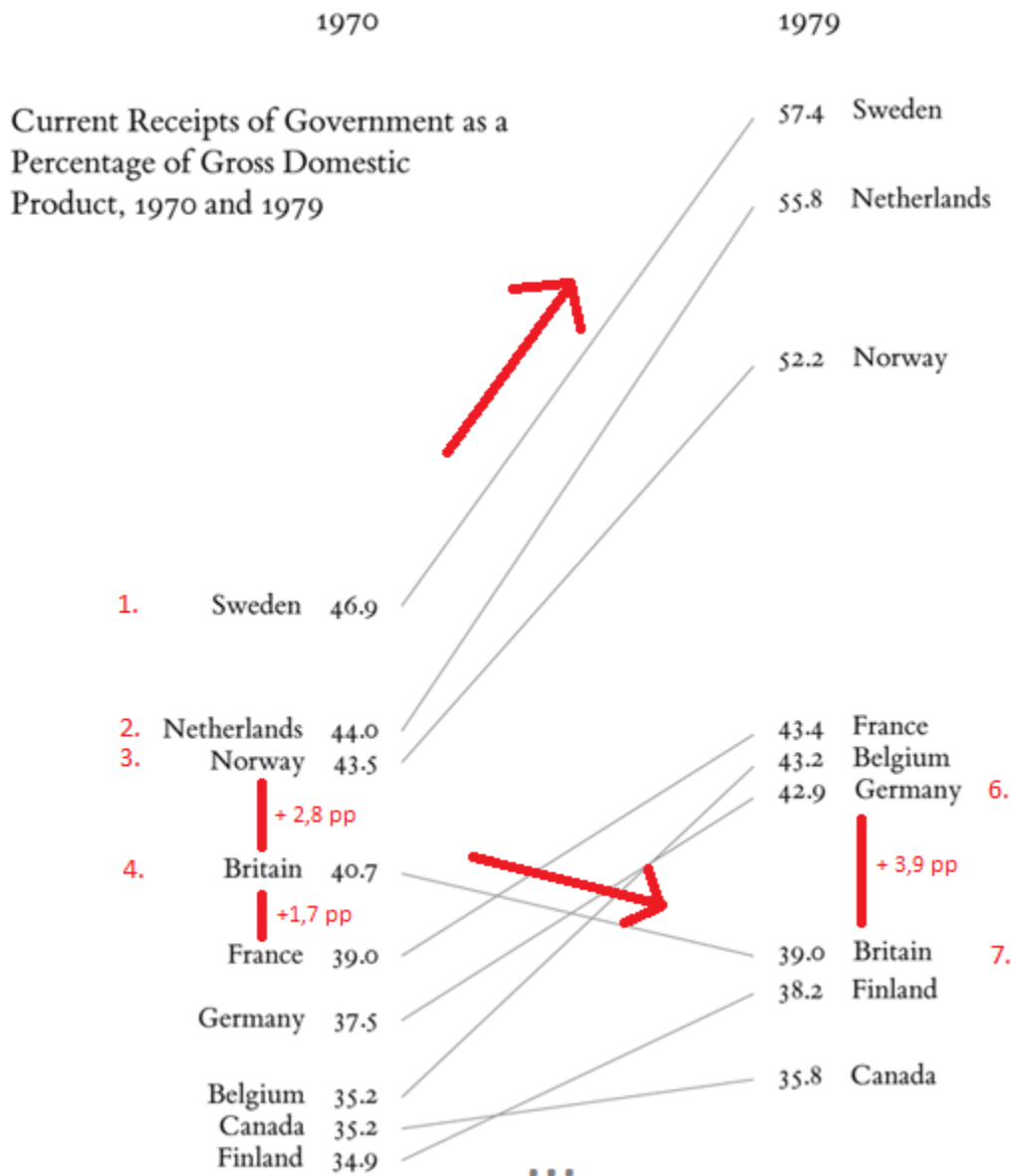
The minimalistic figure of the percentage share of state revenue in gross domestic product- can be interpreted both vertically and horizontally: For the two years, the order of countries is recognizable at a glance. Furthermore, the change in the shares from 1970 to 1979 can be interpreted visually via the gradient - or slope - of the connection line between the annual values.

By means of the *slope graph,* a higher visual density is made possible and more context shown. Information can be transported with little space requirement, without making intelligibility more difficult. Through visualization of

values over two years, the development is shown and change of ranges is visually, easily comprehensible.

With *graphomate slopegraphs,* the two columns cannot only be represented but arbitrarily many can be mapped. The so-called Bump Charts - *slope graph*, which directly maps the rank, can be highlighted: 1st, 2nd, 3rd position … - can be created with a mouse click. Through highlighting for runtime, positions can be highlighted; an image export (PNG) enables further use of the *slope graph*s in other media.

Installation

Local installation of extension in Design Studio

You have installed at least Design Studio 1.6 SP00 on a computer.

1. Save the ZIP file - *graphomate_slopegraph-1.x.x.zip* to a folder of your choice.
2. In Design Studio under *Tools > Install Extension to Design Studio…* by clicking on *Archive…* select the currently stored ZIP file.
3. Select *Finish* to start the installation.
4. Select *Next* and *Next again* to confirm the installation.
5. Accept the license, update conditions, and select *Finish*.
6. Select *Yes* to restart Design Studio.
7. After restart, you will find *graphomate* extensions in the components.

Uninstalling the extension from Design Studio

Select *Help > About…* in Design Studio.

1. Click the *Installation Details* button.
2. Select the component *graphomate slope graphs 1.x.x* to be uninstalled.
3. Select *Uninstall...*
4. Select *Finish* in the following *Uninstall* wizard.
5. Select *Yes* to restart Design Studio.

Server installation of the extension

To use *graphomate slopegraphs* via the BI platform (BOE), the locally installed extension must now be distributed over the BI platform.
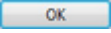
1. Choose in the BI Platform Mode *Tools > Platform Extensions.*
2. Select the extension *graphomate slopegraphs* that is installed on your local computer.
3. Choose *Install on Platform.*
4. Manually restart the BI Platform Adaptive Processing Servers that host the Analysis Application Service and accept the warnings in Design Studio.
5. The graphomate extension appears under *Extensions Installed on Platform.*
6. Choose *Close.*
7. Again restart the BI Platform Adaptive Processing Servers that host the Analysis Application manually.

Uninstalling the Extension from the Server

1. Choose in the BI Platform Mode *Tools > Platform Extensions.*
2. Choose the *graphomate slopegraphs.*
3. Choose *Uninstall from Platform.*
4. Confirm the uninstalling by choosing *Yes.*
5. In order to complete the uninstalling process, manually restart the BI Platform Adaptive Processing Servers that host the Analysis Application Service and accept the warnings in Design Studio.
6. The *graphomate slopegraphs* is then removed from the *Extensions Installed on Platform.*
7. Choose *Close.*
8. Manually restart the BI Platform Adaptive Processing Servers that host the Analysis Application Service.

Quick Start

You have defined a *Data Source,* and you now want to form data rows in this query, with a *graphomate slopegraph* visualization image.

1. To do this, drag a *graphomate slopegraph* component -on the mark area and- link the *Data Source* Drag&Drop to this component.
2. In the *Data* tab of additional properties, you define the data sets to be imaged from the query by clicking on the appropriate button (…) in the *Initial View* columns or line-by-line. The selected data set is displayed with a blue background and adopted after clicking on ⬚ OK ⬚ for the *slopegraphs.*
3. Subsequently, further configuration of the *slopegraph* is possible via the Properties.

Properties

Basically, you have two ways in which to change the properties of *graphomate slopegraphs*:
Using the *Standard Properties Sheet,* that shows all the parameters in a structured list or via the *Additional Properties Sheet.* The latter offers a more user-friendly Interface. In contrast to other graphomate extensions, *slopegraphs* only have one tab on which all properties are found.

The check boxes in front of properties in the *Additional Properties Sheet* are used to control the visibility of elements and activation of functions. The data source to be used can only be assigned via Drag&Drop to the component or to the *Standard Properties Sheet* under *Data Binding.*

> By pressing the F5 key, both the range of characters as well as the *Additional Properties Sheet* can be reinitialized. This is sometimes necessary when changes in the Properties are not adopted directly in the character range.

Slopes Data

You link data with the *slopegraphs*, by assigning a Data Source to a component. Once a Data Source has been assigned, all data of the Data Source will be depicted. The slopes will be generated from the line characteristics.

As for the selection of *Slopes Data,* this selection can be made finer (by selecting only certain line characteristics) or changed to the column characteristics (by selecting the column characteristics). If both columns as well as lines characteristics are selected, the slopes will be generated based on the lines characteristics. Totals will be removed automatically from the selected data.

Show Category Labels

This option is used to specify whether the *Category Labels* are displayed via the Slopes or not. As *Category Labels,* the characteristics that were not selected are considered (for example, when lines characteristics were selected, columns characteristics are involved).
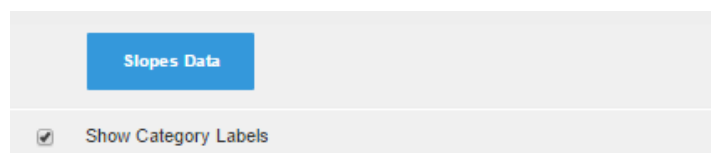
Font Size

You select the font size here.

Font Color

You select the font color here.

Text Color on Hovor

You select the font color used when you hover or click over the slopes/texts at run time.

Font Family

Here, you select the font color to be used.

Only Leading Description

With this option, you specify that only the leading labeling of the slope be displayed. By deactivating Option, the labels will be displayed on both the left and the right. This is redundant in the case of slopes with a few data points, but caters for better readability for many data points.

Number Format

Set the format of the values according to the Specifications of numeral.js.

Font Size	14	
Text Color	black	■
Text Color on Hover	#24bbe9	■
Font Family	Arial	
☑ Only Leading Description		
Number Format	0.00a	

Slope Thickness

Set the thickness of the slopes here.

Slope Color

Specifies the color to be used for the slopes.

Slope Color on Hover

You select the slope color used when you hover or click over the slopes/texts at runtime.

Show Trends in Slopes

By selecting this option, the positive and negative slope color (see below) is applied for ascending or descending slopes.

Positive Slope Color

This color is used, if *Show Trends in slopes* is selected and an ascending slope is involved.

Negative Slope Color

This color is used, if *Show Trends in slopes* is selected and a descending slope is involved.

Negative is Good

Swaps the *Positive* and *Negative slope Color*.

Slope Thickness	2	
Slope Color	#434343	■
Slope Color on Hover	#24bbe9	■
☐ Show Trend in Slopes		
Positive Slope Color	#8cb400	■
Negative Slope Color	#ff0000	■
☐ Negative is Good		

Use Ranks

By selecting this option, the scaling of the slopes is no longer done based on the values of the slopes, but based on the ranking of the values. Then, strictly speaking, a slope graph is no longer involved, but a so-called *Bump Chart*.

To preserve the two chart types from confusion and prevent false interpretation, a point (*Rank Dot*) is placed as an additional visual element at the end of each slope for Bump Charts.

Rank Dot Radius

Sets the radius of the Rank Dot.

Ascending Order

This option allows you to invert the values axis, so that no longer the greatest but the smallest values are shown first. The option also applies if *Use Ranks* has been selected so that one proceeds according to the ranking.

Use Ranks	
Rank Dot Radius	3
Ascending Order	

At this point, you will find information on the used version of the *graphomate slopegraphs* as well as a link with which you can inform us about errors and feature desires. Under credits, you will find an overview of the free libraries that we use.

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slopegraphs Version: 1.2

Please use this link to submit errors or ideas for improvement.

The General Terms of Licence and Maintaining of the graphomate GmbH apply.

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Runtime Interactivity

The *graphomate slopegraphs* supports some functions that can be used interactively at runtime. Many (but not all) of these functions are configurable on the *Additional Property Sheet.*

Hover und Click

By hovering over a text at run time, the entire slope (i.e. all partial pieces and texts) will be highlighted in color. The color for text and slope highlighting can be selected separately via the Properties. If highlighting should be retained, this can be done by a click. By clicking a new, the mark can be removed again. By clicking, several Slopes can be highlighted at the same time.

PNG Export

When hovering over the component in the right upper corner at run time, an export icon will be displayed. By clicking on the icon, a new window that contains a PNG of the slopes opens, which is suitable for use in presentations or for printing. Slopes that were previously highlighted with a click are also highlighted in the exported image.

Known Issues

- The space displayed for the design and runtime between labeling and value is lost during the PNG export. Instead, a single space is displayed.
- In rare cases, it is possible that texts protrude from the bottom of the Container of Visualization. This is the case, if the values are very different in size, for example, because the sums in the *Initial View* were switched on. In this case, we recommend that the sums to disabled.

Number Formatting

Possible Inputs for the numeral.js Format String

Floating point		
Number	**Format String**	**Output**
10000	'0,0.0000'	10.000,0000
10000.23	'0,0'	10
-10000	'0,0.0'	-10.000,0
-0.23	'.00'	-,23
-0.23	'(.00)'	(,23)
0.23	'0.00000'	0,23000
0.23	'0.0[0000]'	0,23
1230974	'0.0a'	1,2m
1460	'0 a'	1 k
1	'0o'	1st
Currency		
Number	**Format String**	**Output**
1.000.234	'$0,0.00'	$1.000,23
1000.2	0,0[.]00 $'	1.000,20 $
1001	'$ 0,0[.]00'	$ 1.001
Percentage		
Number	**Format String**	**Output**
1	'0%'	100%
-0.43	'0 %'	-43%

Source