Finance Data

Universiteit Utrecht

Thomson Reuters Eikon

Equities and Fixed Income

Introduction Manual



THOMSON REUTERS

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1. Introduction

1.1 When do I use Eikon?

Eikon is a complex financial database from Thomson Reuters which contains most of the data relevant for any financial research. Just as its predecessor Datastream it is available through the software itself or through an Excel plug-in. As it is the most comprehensive platform available at the UU, it is very useful in a lot of situations. On the other hand, it is sometimes easier to use another platform due to the complexity of Eikon.

This manual will help you understanding the basics of this powerful tool

1.2 Request access for Eikon

Eikon is available on five computers in the computer room **Spinoza 1.01**. The computers are denoted as EIKON 1 – 5 with a sticker. The number of the individual computer is important as it is only allowed to use a certain account on a certain computer.

A login-password combination can be asked by sending an email to uufinancedata@gmail.com (further information about this process should have been sent to you by email).

Please note that it is NOT allowed to use this account anywhere else than in the Adam Smith computer room.

1.3 Where can I get more help with Eikon?

Thomson Reuters does have an online help desk, but this is unfortunately not available for students. If you need more support you can always contact the finance team of the University by writing an email to uufinancedata@gmail.com. It is also possible to get direct support by visiting the responsible student assistant. He is available **most Tuesdays from 11am to 5pm** in the computer room of Spinoza 1.01

2. The Excel Plug-in

2.1 Getting Started:

Eikon in Excel can be opened by simply searching for 'Eikon.exe - Excel' in the start menu of Windows. This will open up a Excel sheet with 2 more selections in the top menu. The plug-in for Eikon is denoted as 'Thomson Reuters'. In the top right corner, you can select 'Sign Up' in order to log in and use Eikon. Log in with the combination you have received per email (see section 1.2). You are not accessing Eikon via Excel.

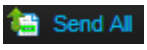
2.2 Formula Builder

2.2.1 A standard request

The easiest way to access data in Eikon is via the formula builder. What it basically does is writing you a code which will retrieve data from a database. Writing this code is essentially quite simple and similar to the time series requests of Datastream.

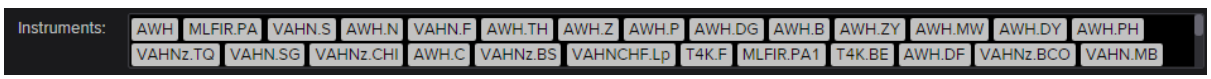
Opening up the formula builder by clicking on the 'Build Formula' symbol will open up a window. We are now in the main menu.

Eikon's formula builder works quite similar to other data platforms: First, you select the companies you want data from, then you select the variable. In Eikon, the various companies are called **Instuments**. The different variables (or columns) are called **Data Items.**

In the top bar you can enter your instruments. You can either directly search for them by namer, ticker etc. or you can click on the small  on the side. This will open a window which will allow you to select different companies with filters. For this guide we will select the companies of **Swiss property and causality insurance companies.** To do so we enter 'Switzerland' as a country and 'Property and Causality Insurance' as a sector. By clicking on the 'Search' button it will search for companies that match your entry. This will give you a list of various companies, in this case 49. You can select now the for you relevant companies. In our case we want them all, so we click on the 

button. We can close this window now and we see our selected companies are listed as instruments.

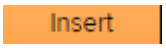
TIP: *Use the ´Screener´ app to select all the equities from one Stock Exchange. For further info, check section 3.1.*



Picture 1: Several instruments are selected

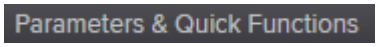
Now we have to choose what information we want to know from this data, the data items. One way is to simply search for our data item in the search bar. This seems straight forward, but can lead to confusion sometimes as its sometimes hard to know which item you want exactly. Sometimes it makes sense to first select a category to narrow down your search.

Finding the right data item is mostly a trial and error process. It helps a lot to read the describtion to an item first before using it.

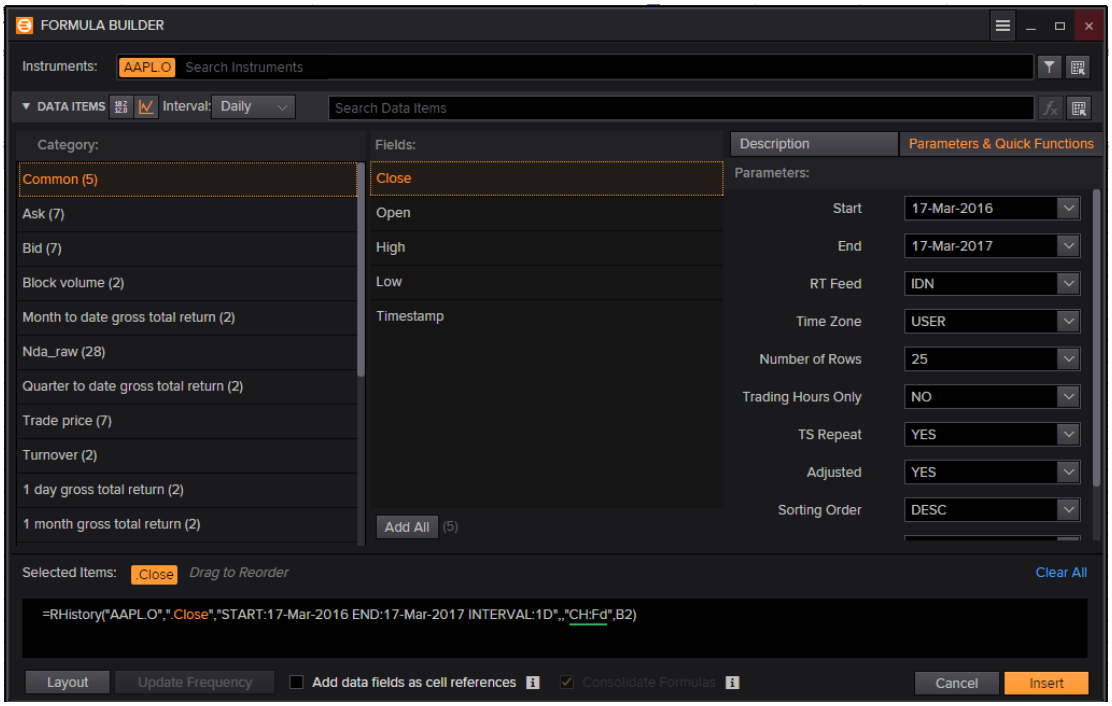
For the example of this manual we are interested in the total revenue of these equities. As this is quite straight forward we just enter 'Total revenue' in the searchbar. We click on the top search item and on the right side we can now see a description to the item. This shows us as well on which date the data is from. This is adjustable, but for now we leave it at the standard one. Once we are content with the data item we can hover over the bar in the Fields list and a blue 'add' button should appear. This will add this item to the formula, which we can see on the bottom of the screen. It is possible to add other data items of course, but in our example we are done for now. We insert the formula to Excel by hitting the 

button on the right bottom.

2.2.2 Time Series request

The formula builder also has two different options for time series. The first way is to change the data items to time series ones. To do so, click on the  button in the top left corner. This will give you a different selection of data items. This option is mostly used for prices and returns. For instance, the close price can be found in the 'Common' section. In the top bar it is possible to select the frequency of data to retrieve. Choose the interval you want in order to get the right amount of data. To define a certain time period we click on the 

button and select a start and end date.



Picture 2: TS Request for 1y

However, one will quickly see that barely any of the data items are available in the time series request. For instance, there's no data item for the total revenue available as TS item. This is because Eikon differs between "actual" time series data and "several static requests from different periods". Mostly, "actual" time series data are defined as items that seem rather useless without including time as a variable. On the other hand, there are items that can be interesting to look only at one time. Those are found in the menu for static data. But by adjusting the parameters of the data item, it is possible to download static data from different period, therefore including a time factor.

2.2.3 Layout options

One aspect that can be quite tricky in the formula builder is getting the layout right. Sometimes it is straight forward, for instance if you have only one instrument and only one data item. (This will return a 1x1 matrix). But once you have several instruments with several data items and also time series data, you have to be careful to not get confused by all the data.

To show you a way to do it, let´s assume we have 3 instruments, and we want to look at the closing price and the revenue mean for the last 25 dates. Entering this in the formula builder is not too difficult, but when we just insert this we end up with something looking like this:

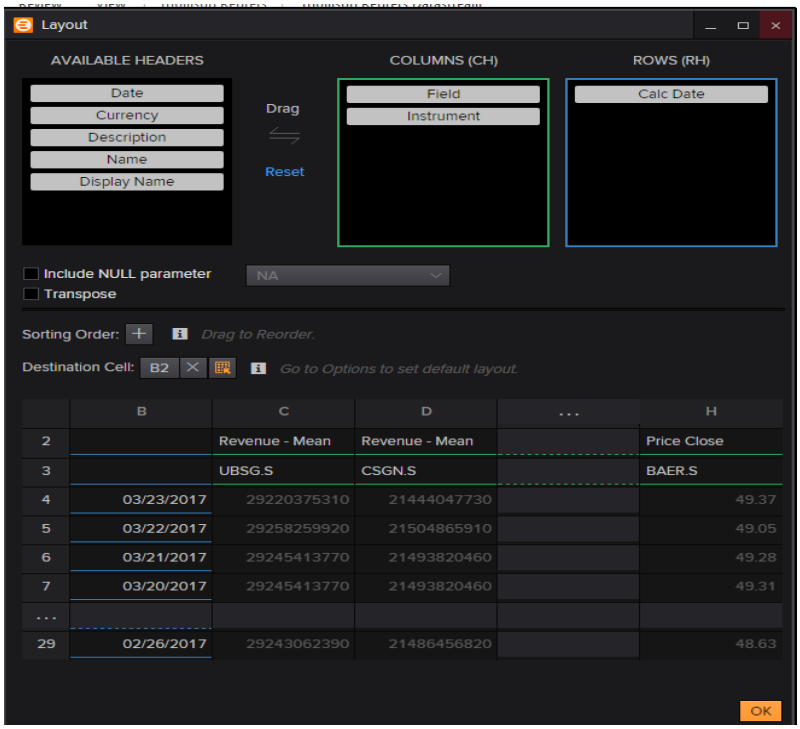
A1 =TR("UBSG.S;CSGN.S;BAER.S";"TR.RevenueMean;TR.PriceClose";"SDate=0 EDate=-25 Frq=C Curn=CHF CH

A	B	C	D	E
Updated at 12:48:26				
		Revenue - Mean	Price Close	
	UBSG.S	29220375310	15,6	
	UBSG.S	29258259920	15,53	
	UBSG.S	29245413770	15,8	
	UBSG.S	29245413770	15,89	
	UBSG.S	29245413770	16,04	
	UBSG.S	29245413770	16,04	
	UBSG.S	29245413770	16,04	
	UBSG.S	29245413770	16,14	
	UBSG.S	29242692350	16,17	
	UBSG.S	29242692350	15,98	
	UBSG.S	29242884650	16,09	
	UBSG.S	29242884650	16,17	
	UBSG.S	29242884650	16,17	
	UBSG.S	29242884650	16,17	
	UBSG.S	29242884650	16,11	
	UBSG.S	29242884650	15,92	
	UBSG.S	29242884650	15,9	
	UBSG.S	29242884650	16,02	
	UBSG.S	29242884650	16,22	
	UBSG.S	29242884650	16,22	
	UBSG.S	29242884650	16,22	
	UBSG.S	29242884650	16,13	
	UBSG.S	29242884650	16,2	
	UBSG.S	29242884650	15,47	
	UBSG.S	29242884650	15,44	

Picture 3: This is not exactly what we´re looking for

The problem is that we have not yet specified how we want Excel to show our data. To change that we go back into the formula builder and click on Layout in the bottom left corner. Here we can select what we want to see and how we want to see it. First of all, we include the item ´Cal Date´ into the **Rows** option. This will add the date stamps to our time series data. But also we switch the ´Instrument´ item to the **Columns** so that we have the different instruments as columns and only the time stamps in rows. In the spreadsheet below we get a preview of how it will look like. It is also possible to transpose the data, or change the destination cell.

TIP: To transform an excel file from Eikon/Datastream queries into a Stata dataset in panel form, it is convenient to download each individual variable (e.g., assets, liabilities) in a different spreadsheet containing that variable for all firms over time. This also reduces the risk of crashes (less data for query).



	B	C	D	...	H
2		Revenue - Mean	Revenue - Mean		Price Close
3		UBSG.S	CSGN.S		BAER.S
4	03/23/2017	29220375310	21444047730		49.37
5	03/22/2017	29258259920	21504865910		49.05
6	03/21/2017	29245413770	21493820460		49.28
7	03/20/2017	29245413770	21493820460		49.31
...					
29	02/26/2017	29243062390	21486456820		48.63

Picture 4: This looks much better already

Once we insert it into Excel we get a proper spreadsheet which is easy to read:

Updated at 13:01:01							
		Revenue - Mean	Revenue - Mean	Revenue - Mean	Price Close	Price Close	Price Close
		UBSG.S	CSGN.S	BAER.S	UBSG.S	CSGN.S	BAER.S
	23-3-2017	29220375310	21444047730	3091852850	15,6	14,56	49,37
	22-3-2017	29258259920	21504865910	3107852850	15,53	14,85	49,05
	21-3-2017	29245413770	21493820460	3105178010	15,8	15,12	49,28
	20-3-2017	29245413770	21493820460	3105178010	15,89	15,33	49,31
	19-3-2017	29245413770	21493820460	3105178010	16,04	15,48	49,25
	18-3-2017	29245413770	21493820460	3105178010	16,04	15,48	49,25
	17-3-2017	29245413770	21493820460	3096010740	16,04	15,48	49,25
	16-3-2017	29245413770	21493820460	3096010740	16,14	15,5	49,83
	15-3-2017	29242692350	21493820460	3096010740	16,17	15,6	49,98
	14-3-2017	29242692350	21493820460	3096010740	15,98	15,37	49,07
	13-3-2017	29242884650	21490911360	3096010740	16,09	15,52	49,7
	12-3-2017	29242884650	21490911360	3096010740	16,17	15,58	49,34
	11-3-2017	29242884650	21490911360	3096010740	16,17	15,58	49,34
	10-3-2017	29242884650	21490911360	3096010740	16,17	15,58	49,34
	9-3-2017	29242884650	21490911360	3096010740	16,11	15,45	49
	8-3-2017	29242884650	21490911360	3096010740	15,92	15,43	48,59
	7-3-2017	29242884650	21490911360	3096010740	15,9	15,21	48,7
	6-3-2017	29242884650	21490911360	3096010740	16,02	15,27	49,09
	5-3-2017	29242884650	21490911360	3096010740	16,22	15,95	49,25
	4-3-2017	29242884650	21490911360	3096010740	16,22	15,95	49,25
	3-3-2017	29242884650	21490911360	3096010740	16,22	15,95	49,25
	2-3-2017	29242884650	21490184090	3096010740	16,13	15,77	49,3
	1-3-2017	29242884650	21490184090	3096010740	16,2	15,93	49,28
	28-2-2017	29242884650	21490184090	3096010740	15,47	15,15	49,15

Picture 5: Finished layout

TIP: *By putting Instrument over Field in Columns we can change how the data is aligned on the x-axis. In that case, it would first put both items from UBS and then both items from Credit Suisse.*

TIP: *If you are encountering a problem that different firms reported their numbers at different dates, check out Appendix A.*

2.3 Templates

Thomson Reuters Eikon includes templates that can be used to directly download data or also to get an idea how to build your specific formula. The Template Library can be found next to the formula builder button in Excel. There are 226 templates available and they are categorized in the menu on the left. Read through the description to find the fitting one for you and open it with the Open button. This will open a new Excel sheet with the template.

TIP: *Backwards Engineering: If the template does not yet fully fit your needs, find the cell where the formula is entered and try to alter it with the formula builder. The cell is often denoted with ´Updated…´*

2.4 IPO Price – Deal Screener

Unfortunately, the price at the initial public offering is not always (actually almost never) available in the formula builder. Nevertheless, there is a way to retrieve IPO data with Eikon.

2.4.1 Install Deal Screener

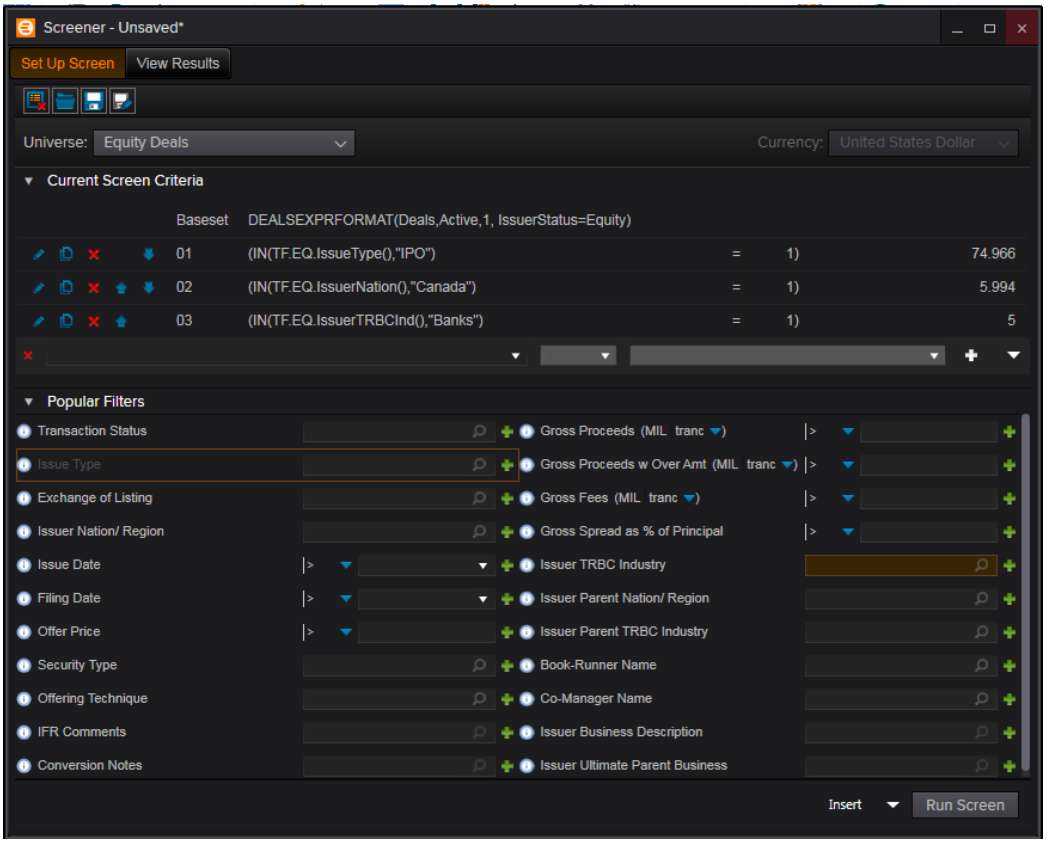
Before we can start downloading data we first need to install an extension to Eikon. In the 'Thomson Reuter' menu of Excel we select 'Options'. This is the settings menu for Eikon. In the menu to the left we go on 'Apps'. This is where we see the various apps that we are using in Excel. The app we want to download is called 'Deal Analytics'. By clicking on 'enable' it will download the app. After doing so the system asks us to restart Excel and Eikon.

2.4.2 Using Deal Screener

In the Eikon navigation in Excel there is now a new section available. It's called 'Deals' and allows us to open the 'Deal Screener'. In order to retrieve an IPO price we have to open the 'Deal Screener' which will open up a window from Eikon. The first thing we have to do is changing the universe from 'M&A Deals' to 'Equity deals'. This will access the database of all the equity deals in a long time. We can now add filters to it and narrow the list down. Please mind that there is a maximum of **3000 equities** that you can download at a time.

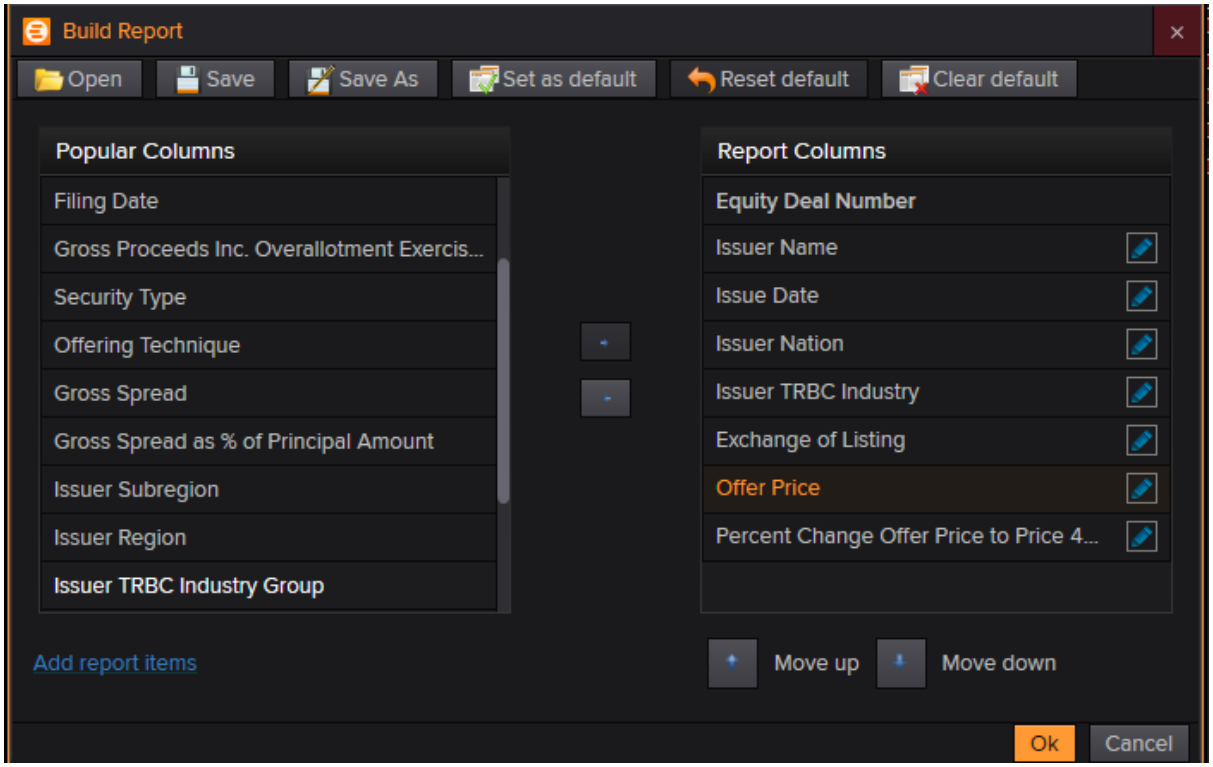
There is one filter that is necessary in order to get IPO prices. Under 'Popular Filter' we can select 'Issue type'. This is where we enter 'IPO' as a criterion so it only selects IPO deals and not others.

All the other filters can be adjusted manually. In this example we select 'Canada' as an Issuer Nation/Region and 'Banks' as an Issuer TRBC Industry. In the end it should look something like this:



Picture 6: Deals request

After selecting the filter, we can run our search request by clicking on 'Run Screen'. This will show us our selection of 5 banks. We can see things like the date of the IPO, the name of the issuer, but not yet the IPO price. To resolve this we click on Build Report. There we can select the different columns that we want to include. In order to get the offer price, we add 'Offer Price' to the right side.



Picture 7: Finished selection

TIP: *Under 'Add report items' you can add even more useful variables like for instance 'Price 4 Weeks after Offer'. Select whatever you think is useful.*

The report is now ready to be exported to Excel. To do so we click in the 'Insert' button.

2.5 Operating with lists

When using the Formula Builder in Eikon it is often the case that you would like different requests for the same selection of companies. Therefore, creating a list is crucial. There are several possibilities to create lists and use them in Eikon. In this section we will look at a few of them.

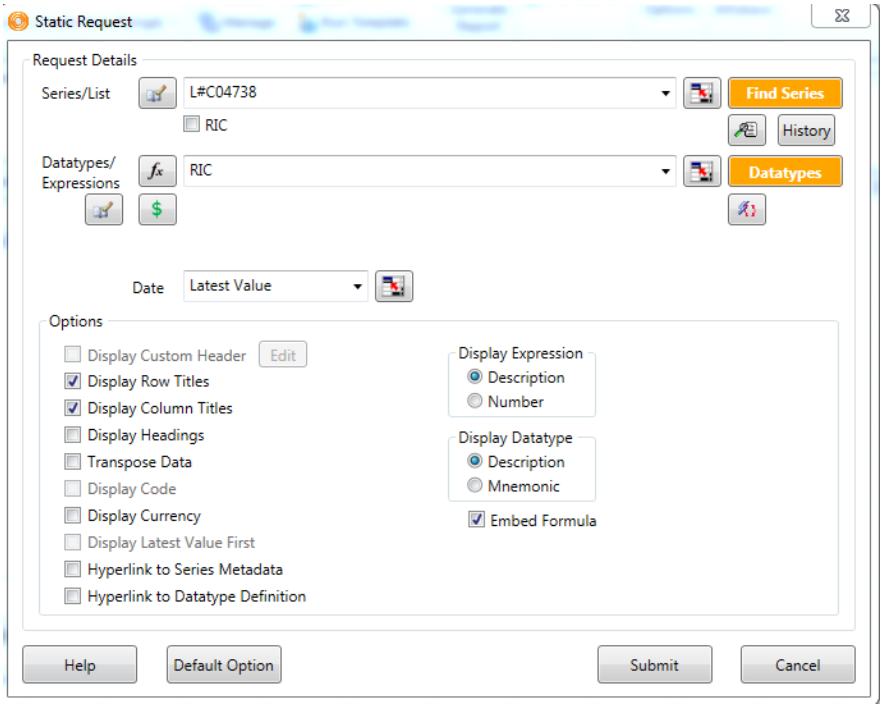
2.5.1 Creating in Datastream

One approach is to select the equities or bonds that you consider for your analysis in Datastream. To see how to build a list and search for items in Datastream, please check out the Datastream Manual.

The way to use lists in Eikon is by referencing to a cell within the formula builder. To do this you need to get a list of codes in Excel where you can link Eikon to. How to do this is explained later. In this section, we first look at how to use the ´reference a cell´ option.

If we open the formula builder, on the top right corner there's a small button  which allows us to select the range. So before we can select a range we need to create a range with symbols that are readable by Eikon. Eikon is not able to read all identifiers, and there is no list available of which Eikon can read and which it can't. So if you have a specific identifier you should just try it out and see if it works. The most common ones to use are ISIN codes and RIC (Reuters Instrument Codes).

Our list from Datastream is saved in a mnemonic from Datastream itself. This means that we can't use them in Eikon. But what we can do is to open a static request in Datastream, insert 'RIC' as a data item and return it. This will give us a nice list of RIC codes which we can now reference to in Eikon. (note that in my example I used the Datastream from the Eikon Excel. If you use the normal Datastream Excel 'RIC' codes return no value. But you can use 'ISIN')

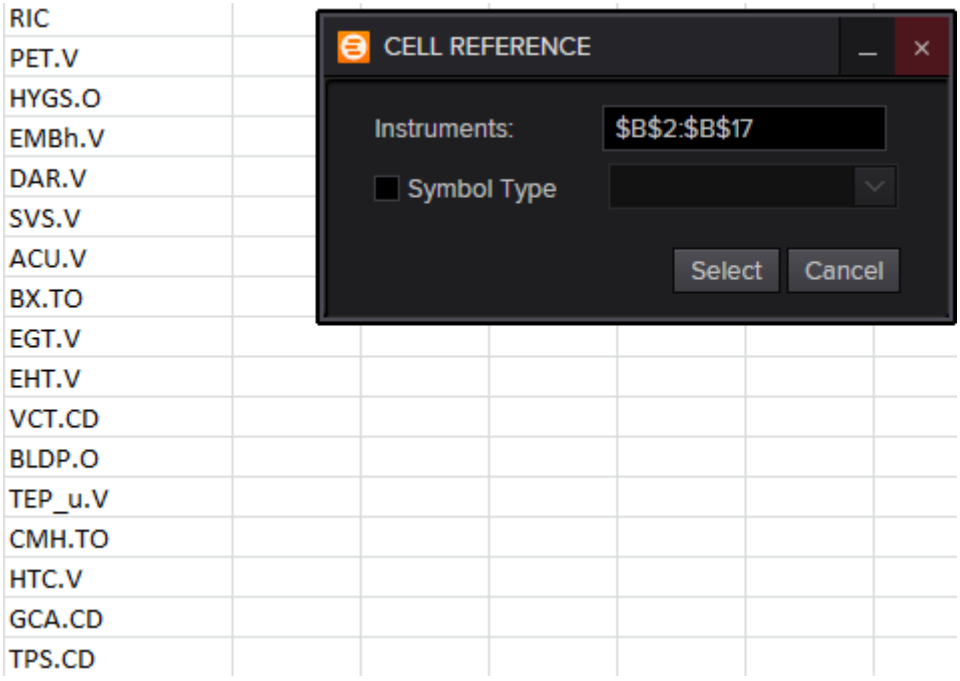


Picture 8: Retrieve list of RICs

Type	RIC
C:PET	PET.V
@HYGS	HYGS.O
C:EMB.H	EMBh.V
C:DAR	DAR.V
C:SVS	SVS.V
C:ACU	ACU.V
C:BX	BX.TO
C:EGT	EGT.V
C:EHT	EHT.V
C:VCT	VCT.CD
@BLDP	BLDP.O
C:TEP.UN	TEP_u.V
C:CMH	CMH.TO
C:HTC	HTC.V
C:GCA	GCA.CD
C:TPS	TPS.CD

Picture 9: Table with RICs

Now we can open Eikon again and select instruments by referencing to a range of cells. This will input all the equities as instruments in Eikon.

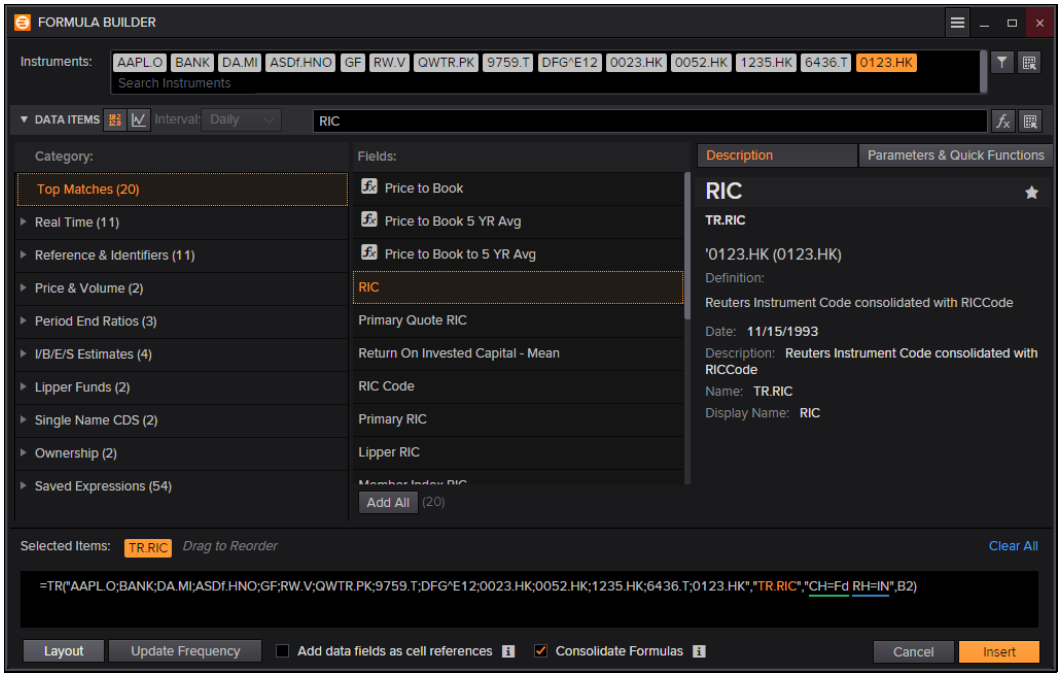


Picture 10: Reference to a cell

2.5.2 Creating lists in Eikon

It is also possible to select the instruments for your list in Eikon. You select them once with the instrument searcher and select the data item 'RIC'. This will return a list of RIC codes of your selected instruments. This list can now be saved with Datastream on the Datastream

database, and can accessed afterwards. (Also check out Section 3.1 ´Screener´ for creating lists in Eikon'



Picture 11: Search for RIC

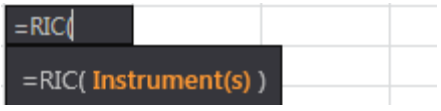
TIP: *Also check out section 3.3 ´Portfolio and Lists´ for more information on lists.*

2.6 Excel Function

The Eikon plugin uses a function to download data into Excel. This formula is ususally generated with the formula builder. But Excel also gives us the possibility to write functions directly into cells. Next to the usual functions that are available on Excel, Thomson Reuters added some Eikon specific functions.

=RIC()

This function allows us to look up the **Reuters Identification Code** (RIC), which can then be used to reference to in the formula builder. After Entering =RIC(in the cell, an Eikon designed window will pop up, which allows us to search for the instrument we are looking for.



After selecting the right instrument, hit enter to insert the RIC in the cell.

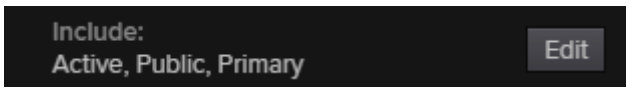
3. Eikon Apps

3.1 Screener

Apart from the Excel plug-in, Eikon also has some great apps that can be useful. One of them is the 'Screener'. This app is used **to select and filter equities** and thereby creating a list that can be used in the formula builder. To advantage to the searching system in the formula builder is that the screener tool has a higher limit. Also, the screener offers better filters to filter out relevant equities.

To open the screener, we first open the main program of Eikon, and then search for 'Screener' in the search bar on the top. The drop-down menu will allow us to open several apps, and we select the top one to open the app.

In the menu on the left-hand side we can see the universe we are in and the filters to the universe. One important aspect is to see that the current universe only contains **active, public** and **primary** equities.



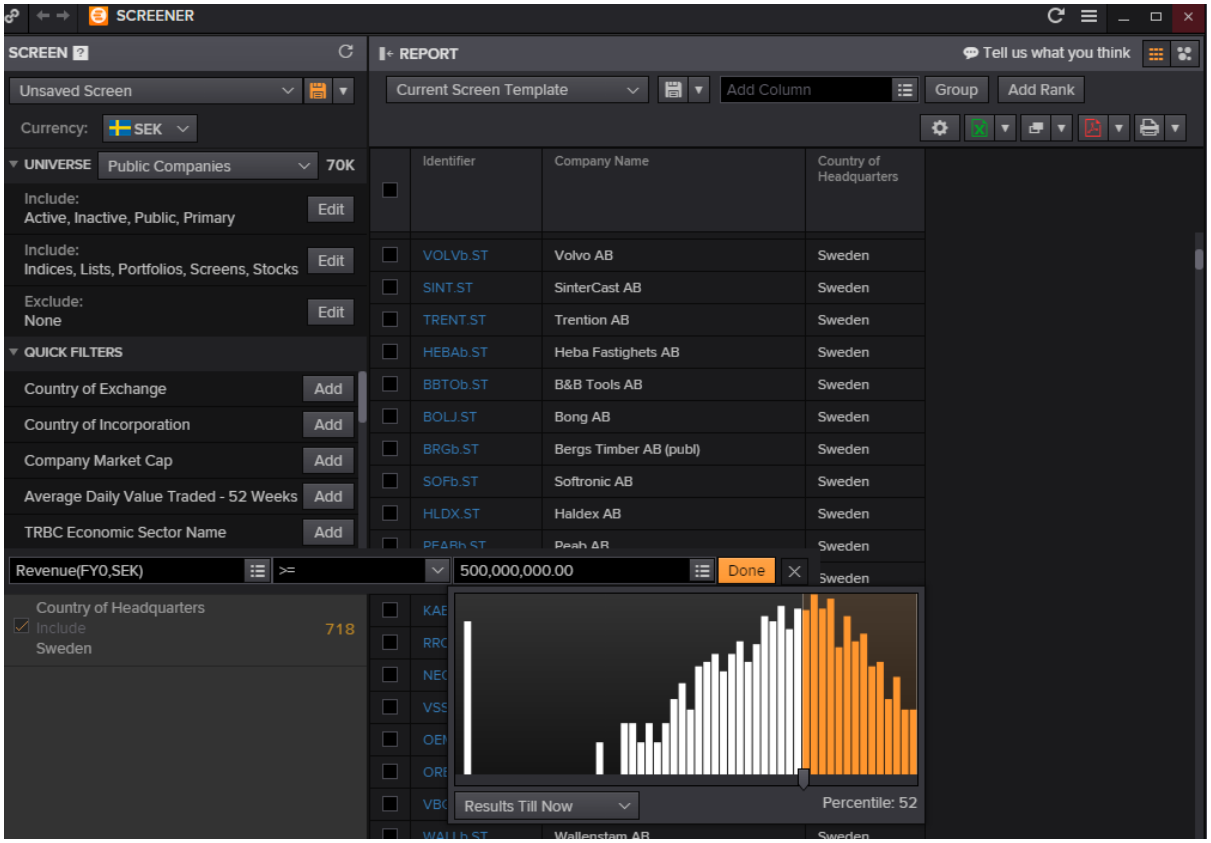
Picture 12: Include in universe

Depending on your interest, you might have to change this as this might lead to biases. For instance, the fact that it only includes equities that are still active might lead to a **survivorship bias.**

The edit button allows us to change the universe and also exclude certain types of equities.

The next step is to filter out specific equity types with for instance one specific industry or one specific country. This process is straight forward and works the same as always in Eikon.

For my selection in this example I searched for **active** and **inactive equities** with their **headquarter in Sweden** which have **a revenue bigger than SEK500,000,000.00 per year**. As you can see in picture 13, Eikon also gives an indication of how many equities fulfill my requirements in a nice graph.



Picture 13: Screener Selection

Before downloading this into Excel it is possible to **add other columns**. To do so, search for the column you want to add in the search bar of the **report menu.** Once the selection is complete we can download it into Excel by clicking on the  button. All 242 equities are now available with their RIC in Excel and can be used in the formula builder (for more on this, check out section 2.4 'Operation with lists').

The screener app has some other great features than just exporting lists. For instance, we can get a scatter plot of two various variables of our selection. What this means is that we can show the mapping of two variables directly in a graph.

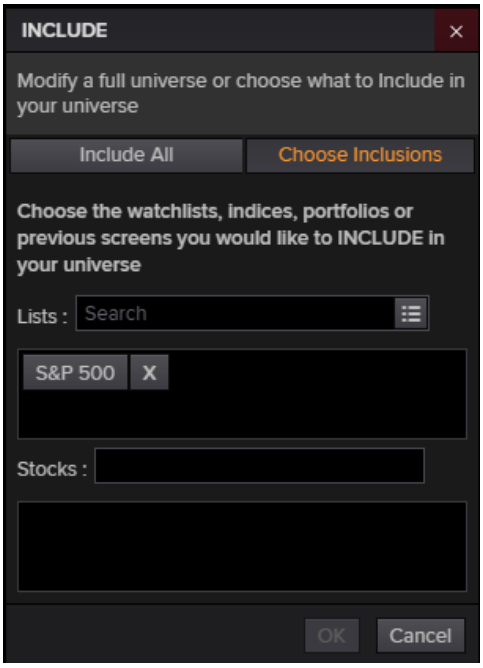
To activate this option, we select ´Scatter plot view´  in the top right corner. We can now select a variable for the x-axis and a variable for the y-axis. For my x-axis I chose **Revenue** and for my y-axis I selected **CO2 Equivalents Emission Total.** This will give us a nice scatter plot which can be used to find outliners or trends in an equity selection.

TIP: *Save your screen so you can use it another time and continue working on it.*

3.1.1 S&P 500

In order to get a list of all the equities included in stock lists like the S&P 500, you have to change the universe to only include equities of this list.

When you edit the universe, click on 'Choose Inclusion' and enter your list in the list search bar. There you select you list, in this case "S&P 500". This will return all 505 companies currently listed in the S&P 500.



Picture 14: Alter the universe

3.2 Search Bar

Once Eikon is open you can search for any term in the search bar that appears in the top left corner. This option is less used to retrieve data but more to just ´look a bit around´. Not only equities can be found, but also fixed income, industries or countries.



Picture 15: Italy´s country overview

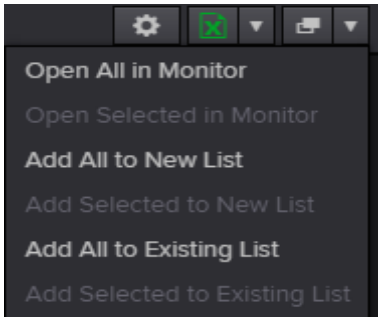
Even though it is not very handy to retrieve data, it is still possible sometimes to download whole excel sheets or graphs. These can be simply opened in Excel.

3.3 Portfolio and Lists

Another handy app is the portfolio and lists app. It was already briefly mentioned in the section 2.5 ´Operating with lists´. You can open this app by searching in the search bar. To create a new portfolio, click on Create. Enter a name and a short name for your list and select ´Create´.

You can now add your equities manually by RIC, Name or any other way to find the equity. But the easiest way to add multiple equities at a time is to filter them with the ´Screener´ app and then send them to my lists.

If you have selected all your equities in the screener you can select the small drop down menu on the right top corner.



There will be an option ´Add All to Existing List´ and you can select your freshly created list.

If you now want to use this list in Excel, you can find a button Lists next to the formula builder app. Clicking on it will open the Portfolio and List manager and will allow you to select your list. Click on ´insert´ and your list will be downloaded in Excel with the corresponding RIC and Name of the equity.

4. Appendix A: Specific Solutions

4.1 Different reporting dates

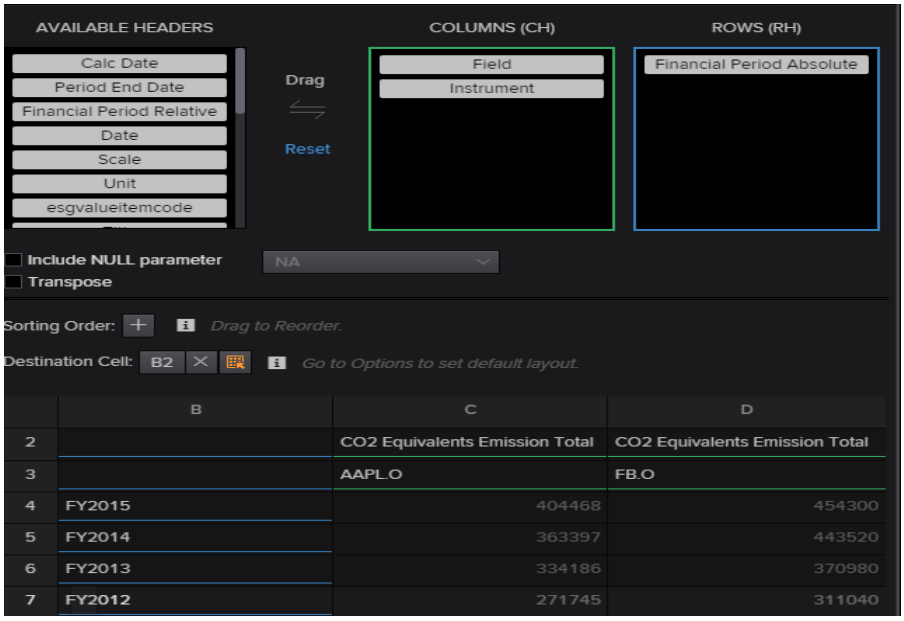
Sometimes it happens that we want to compare a variable over several periods of two different equities. The problem is that not every company reports this variable at the same time. So when we create a formula that reports us the yearly value over 4 years, and add `Date´ to show us which value belongs to which year, we get something like this:

Updated at 13:21:45			
		CO2 Equivalents Emission Total	CO2 Equivalents Emission Total
		AAPL.O	FB.O
	26-9-2015	404468	NULL
	27-9-2014	363397	NULL
	28-9-2013	334186	NULL
	29-9-2012	271745	NULL
	31-12-2015	NULL	454300
	31-12-2014	NULL	443520
	31-12-2013	NULL	370980
	31-12-2012	NULL	311040

Picture 16: Different reporting dates

Even though we just want to compare the years, the system cannot match the two dates because they are not the same.

To solve this we go into the ´Layout´ menu in the formula builder. Instead of having ´Date´ in our **Row** selection, we now choose the item ´Financial Period Absolute´. This will solve the problem as this will only report the financial period and not a specific date.



	B	C	D
2		CO2 Equivalents Emission Total	CO2 Equivalents Emission Total
3		AAPL.O	FB.O
4	FY2015	404468	454300
5	FY2014	363397	443520
6	FY2013	334186	370980
7	FY2012	271745	311040

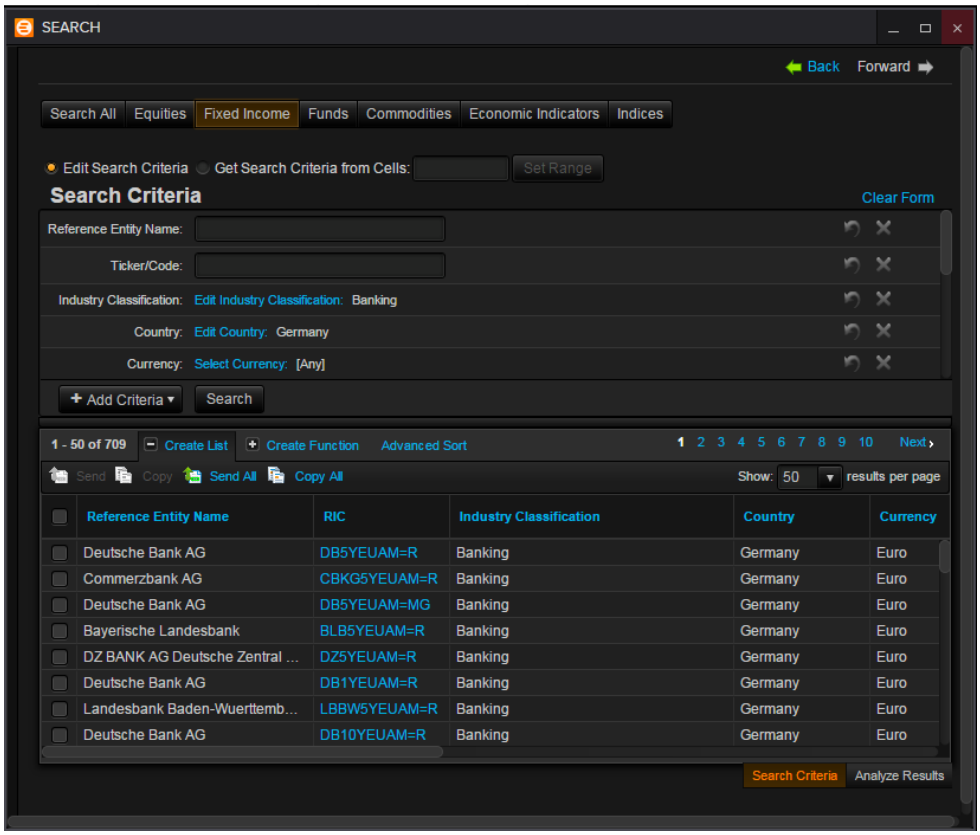
Picture 17: Periods in financial periods

4.2 Working with CDS instruments

For some reason, the formula builder does not allow us to work with more than 25 Credit Default Swaps at once. When you search for instruments in the formula builder it is possible to send them. But once you have selected your data items and click on insert, nothing happens.

To bypass this problem, we want to download the list of CDS into Excel first, and then reference to the cells in the formula builder.

Step 1: Once you have applied all your search criteria for your CDS, click on search to see all the results. In my case, I selected CDS of all German banks.



Picture 18: CDS selection

Step 2: Click on 'Copy All' to save them in your memory (as in Ctrl + C). Open a new Excel file and paste them with Ctrl + V.

Step 3: Open the formula builder and select the RICs as instruments for your new query.

Data items like 'mid spread' should be no problem to retrieve now.