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Basic Guide to Working with Thomson Reuters Eikon

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Abstract

This guide aims at providing student assistants and students writing their thesis at the Institute of Accounting and Auditing with an introduction to using Thomson Reuters Eikon. The guide is restricted to basic topics and makes no claims to completeness or perfect accuracy. Still, I am confident that it provides sufficient assistance to your thesis or research work. If you come across information that is either false or lacking, I would be happy to receive feedback from you (stefan.miels.1@hu-berlin.de).

1 Preliminary Questions

In this section, I will address some of the questions that you need to have answers to before beginning to work with Eikon. By the time you read this guide, you are likely to have already answered some if not most of these questions yourself. For this reason, I encourage you to glance through the headers of the subsections and then assess whether reading a subsection will yield you any new information. From section 2 onwards I will cover information that should be of use to all readers of the guide.

1.1 How do I get access to the database?

In order to get access to Thomson Reuters Eikon , you need an active account with our faculty's Lab for Empirical and Quantitative Research (LEQR). In case you do not already have an account, you are required to apply for one via the LEQR's homepage (leqr.wiwi.hu-berlin.de | Button 'Membership'). The application has to be signed by the person that you named as your supervisor and handed in by you at the LEQR's office (Room 131 at SPA1) afterwards. The LEQR staff will then provide you with a PDF file containing both your account data as well as instructions for accessing the various databases which the faculty has licenses for. The crucial part for you is that you will need to connect to remote desktop **eikon1.wiwi.hu-berlin.de**.

1.2 At what times can I use Eikon?

You are required to reserve a timeslot for yourself each time you want to connect to the remote desktop (Figure 1). This is due to the fact that only one faculty member is permitted to use

the connection at any given time. In principal, you can reserve timeslots at any time of the week. However, access is limited to four hours per user per day. Unfortunately, there are some irregularities in the availability of the LEQR's servers. When these happen while you want to access the database, your best option is to contact the LEQR staff and inquire about the problem (rdc-team@lists.hu-berlin.de).

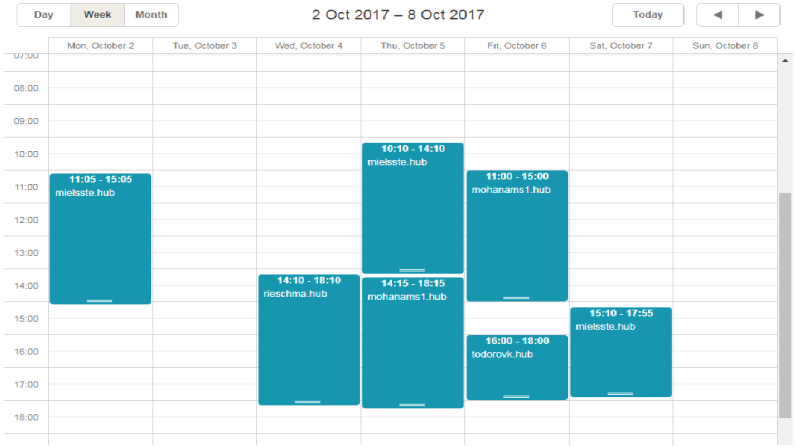

Figure 1: Scheduler

1.3 Do I need to be at the faculty in order to access the database?

No. Using the databases requires being connected to the HU network, but not physical presence at the university. You can obtain access to the database from anywhere in the world by setting up your LEQR homeshare and connecting to the HU network via VPN. For more information on this issue, please refer to the instructions that were provided to you together with your LEQR account data.

1.4 Do I need to have any special programs installed to make use of Eikon?

Data is retrieved from the database through an Excel Add-In, making Microsoft Excel the only program required for using Eikon. Excel is installed on the remote desktop, so you do not need to have it on your own system. Since you may want to copy the data from the remote desktop to your local hard drive in order to work with it, you might however need to figure out a way to store the data with whatever application you have available.

1.5 What level of Excel expertise is required for working with the Add-In?

Working with the Add-In only requires very basic knowledge of Excel's functionalities. In fact, the only two functionalities that you will probably not get around using are *Absolute and relative*

cell references and *Autocomplete*. Even if you happen to be a novice at Microsoft Excel, getting a grasp of these concepts is unlikely to take you more than an hour. Additionally, I will provide some examples of their application in the context of the Excel Add-In in a later chapter. In short, a lack of Excel knowledge should not deter you from working with commercial databases.

2 Using the Excel Add-In

2.1 First time Use

After starting your session on the remote desktop, you open Excel 2016. Excel will then automatically load the Add-In for Eikon functions, which allows you to retrieve data from the database.

The Add-In will be displayed to you in the form of two extra headers in Excel's ribbon (Figure 2). If you only want to access Eikon, you will only need the first of these two (Thomson Reuters). In order to unlock the Add-In's functions, a login within Excel is required. (Figure 3). For this login, you dont use your own LEQR account, but enter the data that is given in the related scheduler instead (see Figure 4). After signing in, most of the buttons in the Thomson Reuters section of Excel's ribbon will become active.

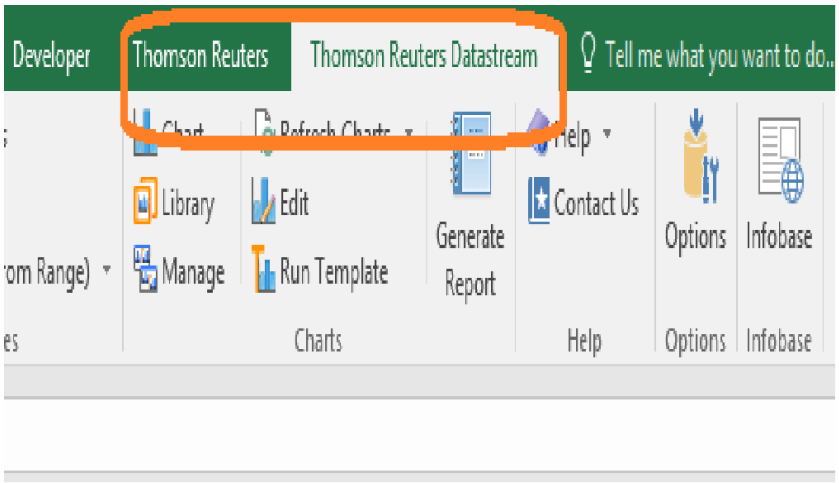

Figure 2: Excel Add-In

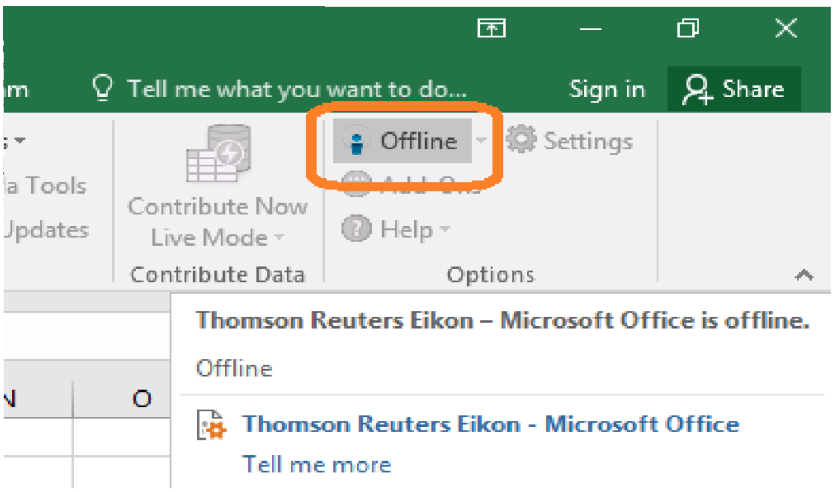

Figure 3: Excel Login

Servername:	eikon1.wiwi.hu-berlin.de
Username:	RDC\<username>
Password:	<password>
Eikon-User:	student1@hu-berlin.de
Eikon-Pass:	RDC-vhR26d
Attention:	**- Please use the EXCEL-Add-In installed on the Eikon-Server.**
	- You will be logged out when your timeslot is over.
	- Only book slots within the next 14 days.

Figure 4: Eikon-User

2.2 Screening for companies

In most cases your data collection task will begin with an institute member giving you a set of criteria by which you have to search for companies. Using these criteria with Eikon's *Screener* will yield you a list of companies in Excel. The screener is accessed by clicking on the related button in the section *Apps* (Figure 5).

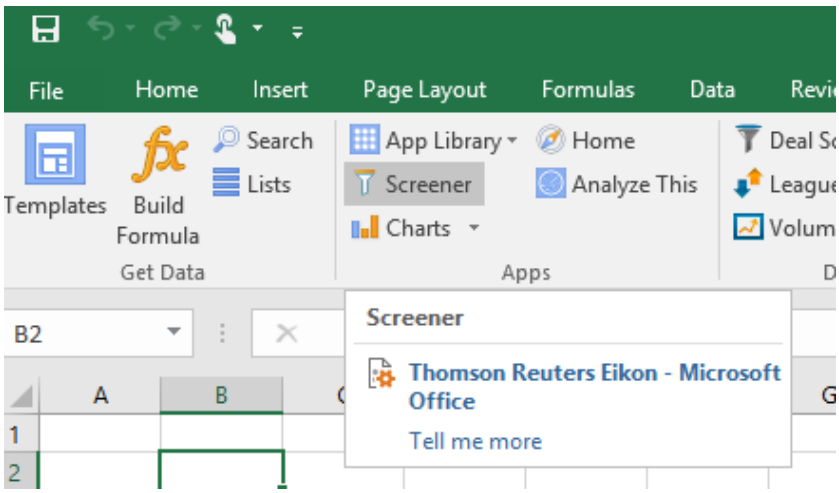

Figure 5: Access Screener

Clicking on this button opens an Eikon window which consists of two main sections (Figure 6). On the left side you can see a list of filters which can be applied to your search. The most popular filters are displayed by default. However, it is possible to look for additional filters by using the search bar titled *Add Filter*.

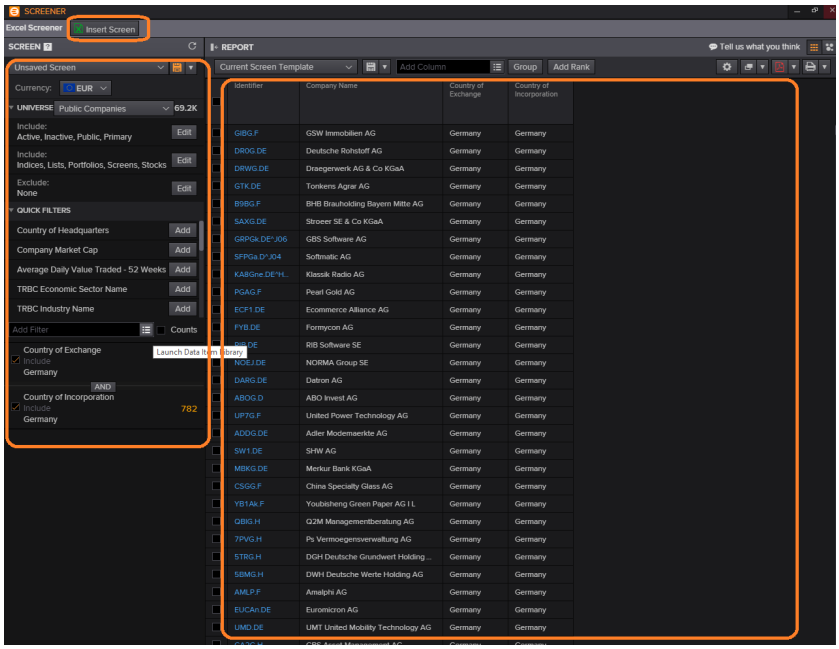

Figure 6: Company Screener

The right hand side displays Eikon's *Report*, which entails the list of companies that fit your criteria. For these companies, the characteristics by which you have filtered are shown in columns. Via the *Add Column* button you are also able to add additional firm characterisitcs to the results table. Yet, you will also be able to add characteristics to your results after you have imported the list into Excel, which is usually the better way of doing it.

In the upper left corner of the screen you find the *Insert Screen* button. This button exports the list of companies as well as all currently displayed firm characteristics to Excel. Following the format used in the *Screener*, each *Data Item* will have its own Excel column.

2.3 Retrieving Data

Excel's connection to Eikon for data retrieval is the *Build Formula* button in the section *Get Data* (Figure 7).

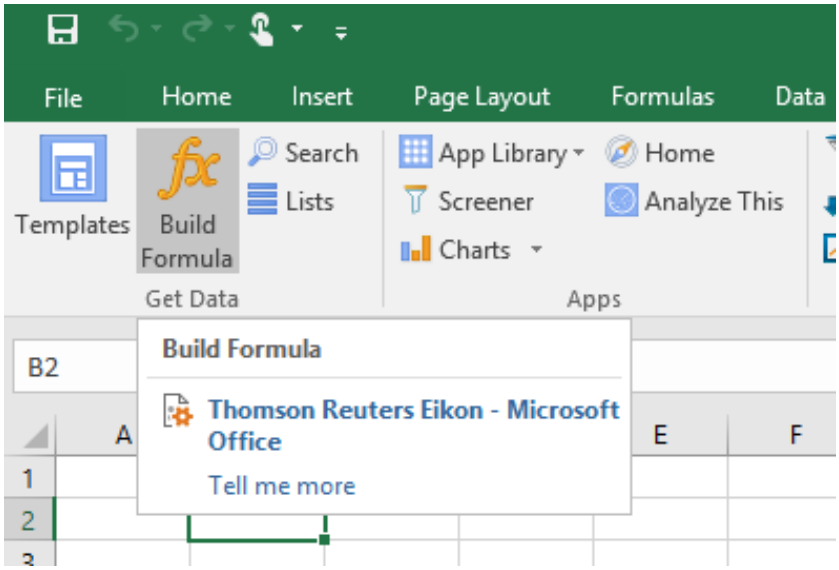

Figure 7: Button Formula Builder

Similar to the *Screener* button, *Build Formula* will open up an Eikon window (Figure 8). In this window you can select the *Data Items* which you want to retrieve. Each time you open the Eikon Window you are also provided with a short instruction on how to use the *Formula Builder*.

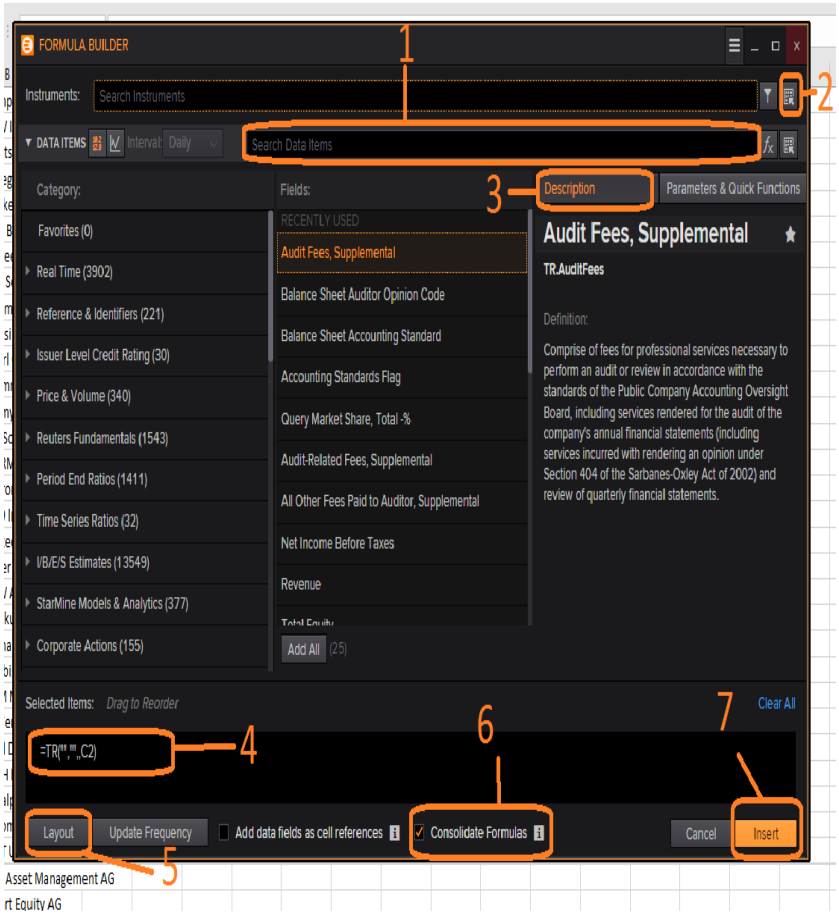

Figure 8: Formula Builder

Before selecting a *Data Item*, it is necessary to determine an *Instrument* which identifies the firm for which you want to get data. In most cases you will already have a list of companies of interest at this point, making it logical to reference that list when retrieving the data. Ideally your list will not only contain the company names, but also a characteristic by which the company can be uniquely identified. The most sensible characteristic to use here is the so-called RIC (Reuters Instrument Code). However, sometimes using the ISIN can be even more benefitial, e.g., when you plan to also gather data from other databases, which will typically not recognize the RIC. Annoyingly, this alternative is not practical when you are dealing with a list of equities instead of companies, since you might run into the problem that your sample contains multiple equities with the same ISIN. Using the Company Name as an *Instrument* unfortunately does not yield sensible results.

The Instrument connection from Excel to Eikon is established by clicking the *Reference a cell* button (Figure 8 No. 2) and selecting the related cell. Make sure to use the correct absolute or relative cell references.

There are multiple ways of selecting the *Data Item* of interest within the Eikon window: Firstly, you can perform a keyword search by using the search bar (Figure 8 No. 1). Secondly, there

is a list of item categories displayed on the left hand side which allows you to navigate to the correct item. If you have already inserted the exact name of the item into Excel, it is also possible to once again reference a cell. This technique might come in handy when you want to retrieve multiple *Data Items* at the same time.

After selecting one of the suggested *Data Items*, Eikon will display a short description of the item you chose (Figure 8 No. 3). This description is useful for making sure that the chosen item actually contains the information you searched for, but is unfortunately not available for all *Data Items*.

The window also offers the possibility to determine certain parameters for each *Data Item* (Figure 9). For example, you might want to scale the data or gather data for multiple fiscal years. The set of parameters that you can choose from differs with the chosen *Data Item*.

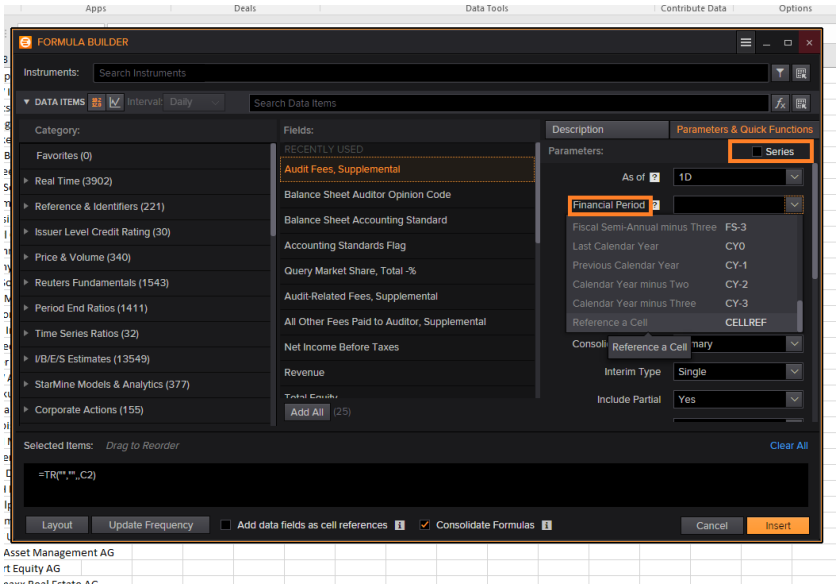

Figure 9: Item parameters

After choosing the item and determining the parameters, you insert the request into your formula by clicking the *Add* button. Then, a preview of your formula will be displayed in the lower half of the window (Figure 8 No. 4).

Before inserting your formula into Excel, you should think about which layout is best to use. The layout can be changed through the *Layout* button in the bottom left corner of the window (Figure 8 No. 5), which is only active after checking the box *Consolidate Formulas* (No. 6), also located on the bottom of the window. The *Layout* window allows you to choose the destination cell as well as the headers of the columns and rows that you want to use, if you want to use any (Figure 10). Furthermore, it gives you the option to transpose the results, which is of crucial importance when dealing with time series data. It is advisable to think about the optimal

layout before retrieving the first item and then determine that layout as the default in the settings. The settings are accessed by clicking on the *Settings* button in the *Options* section (Figure 11) and then choosing the *Formula Builder*.

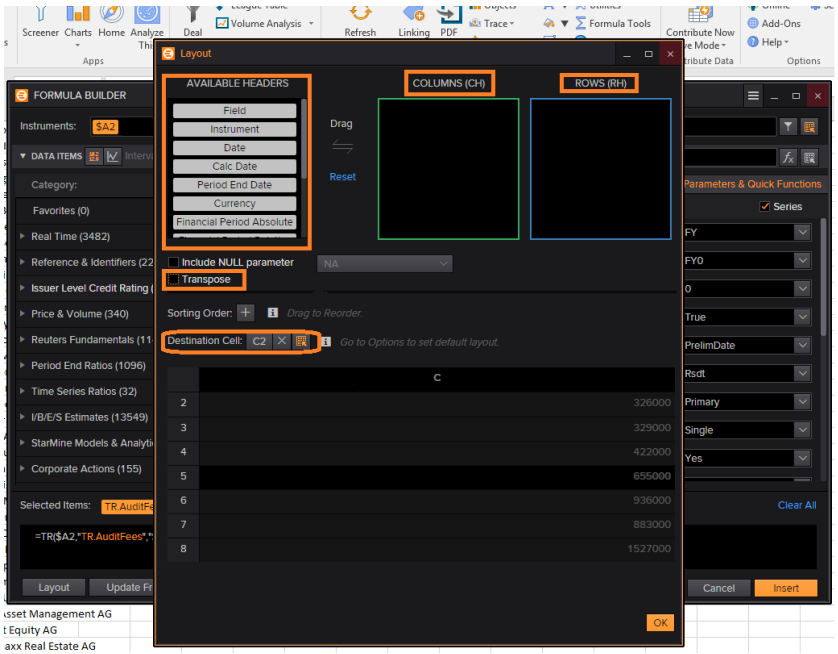

Figure 10: Layout options

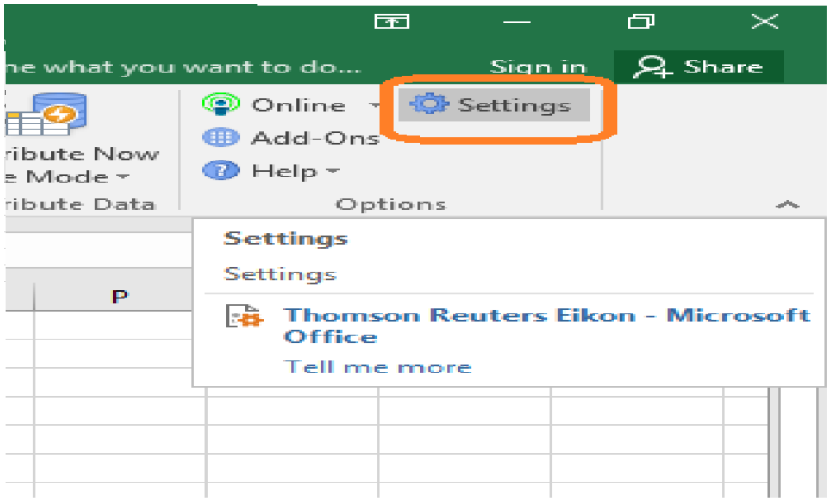

Figure 11: Accessing the default settings

After building your formula, you click on the *Insert* button (Figure 8 No. 7) in the bottom right corner of the window. The formula will then be exported to Excel and the results will be generated automatically (Figure 12). It should be mentioned at this point that you can also determine in the settings whether you want to have the formula and/or the time of the last data retrieval displayed in Excel cells.

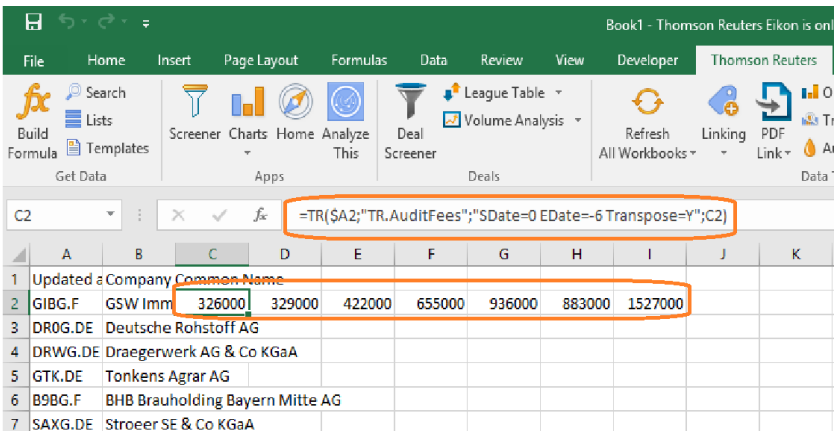

Figure 12: Example results

In most cases you will want to gather data for more than one company. At this point, absolute and relative cell references come in to play. Excel's *Autocomplete* function allows you to copy your formula to cells that are located either within the same column or within the same row as the formula. This is necessary since otherwise you would have to build a new formula for each firm and item that you want to collect data for. Setting up absolute and relative cell references ensures that your formula still refers to the correct identifiers when being dragged to other cells. You may specify the references to be absolute or relative either directly within the *Formula Builder* or you can choose to adjust the formulas in Excel afterwards.

Inserted formulas can easily be changed after the data retrieval without accessing the *Formula Builder* again. In general, it is not necessary to use the *Formula Builder* at all, though it will definitely be helpful in the beginning. Once you know the names of the *Data Items* and the syntax of the Add-In, you can construct your formulas without any help.

For certain types of data, e.g., stock prices or other financial market data, it might be necessary to refresh the data at later points in time. For these cases, the Add-In offers a *Refresh* option (Figure 13), which spares you of having to manually retrieve the data multiple times. When using this option, you should be careful to only refresh the data for which this is necessary. Refreshing the entire workbook will take a very long time in bigger projects and might in some cases even cause Excel to crash. Selecting the range of cells that you want to refresh is done via the dropdown menu below the *Refresh* button.

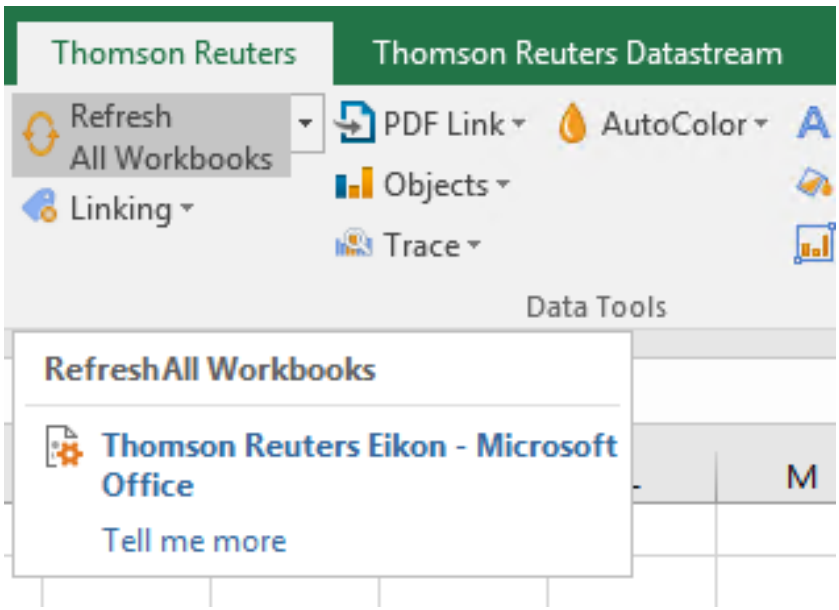

Figure 13: Refreshing data

Since you will often want to use retrieved data with stata or other programs that are not installed on the remote desktop, it is advisable to save a copy of the Excel file to your local desktop. However, since Excel will not be able to compute the functions on desktops that dont have the Add-In installed, you should only copy **the values** from the original file.

2.4 A word on customer support

You may have heard from fellow students that Thomson Reuters is offering customer support for Eikon, which deals with the individual questions of users. While this was true in the past, Thomson Reuters has unfortunately stopped offering customer support to students. As a compensation, they have expanded the FAQ-Section in their app. This section should now be your first choice for seeking answers that are not provided in this guide. The FAQs can be accessed by opening the Eikon App on the remote desktop and then consulting the *Help* section.

3 Thomson Reuters Datastream

3.1 Introduction

Datastream is the predecessor of Thomson Reuters Eikon. It can be used through the second additional header in the Excel ribbon (see Figure 2 once again). If you do not see the *Thomson Reuters Datastream* header in your ribbon, you will need to enable it first. To do this, you need to access the *Add-Ons* menu in the Options section of the Add-In. Enabling Datastream will require a restart of Excel.

Handling Datastream is fundamentally different from handling Eikon. An introduction is provided to you in the form of a tutorial video which was recorded by Stefan Timmermann (it can be found under: Institutslaufwerk -> Tutoren -> Guides Datenbanken). If you do not have access to that directory, you may ask your supervisor to send you that file. If you want some additional information, you should have a look at the *Datastream Workshop* file in the same directory.

Using Datastream instead of Eikon can be useful under multiple circumstances. For example, you might only find some *Data Items* in Eikon with certain restrictions, or you might not find them at all. Since Datastream also provides descriptions for most items, it can also be used to double-check your understanding of the information that an item contains.

3.2 Importing Lists

One aspect of Datastream that has not been covered in the tutorial video is the ability to import already retrieved company lists into Datastream. As you will typically do your screening in Eikon and only come to Datastream for additional information, this functionality might prove to be very useful.

Importing lists can be done by using the *Lists (create from range)* button in the *Utilities* section (Figure 14). After clicking this button, you will be asked to specify the cell range containing the unique identifiers for your companies. Once again the RIC appears to be the most sensible item to use as an identifier. The list should then be saved as an *Enterprise list* and needs to be given a name before saving (Figure 15).

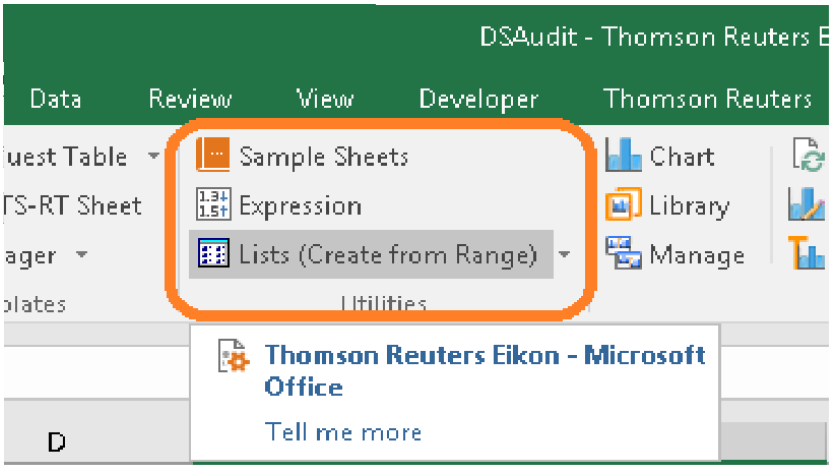

Figure 14: Button list creation

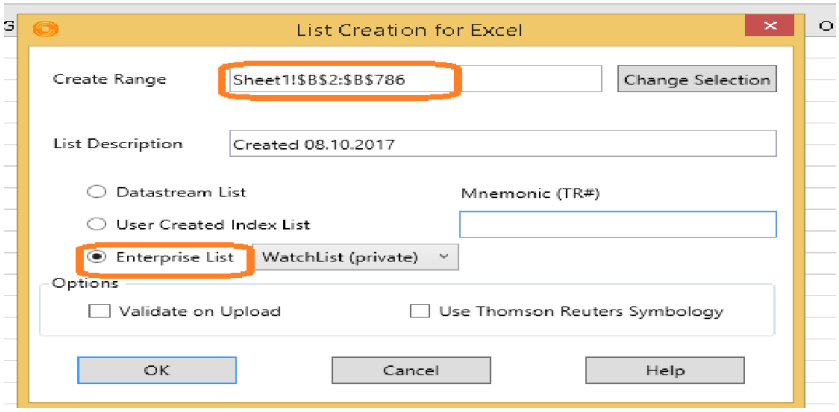

Figure 15: Options list creation

Once you are constructing your request with the help of the tutorial, you can integrate your list by choosing the second button in the column *Series Lookup* and then selecting the generated list (to be searched by name) (Figure 16).

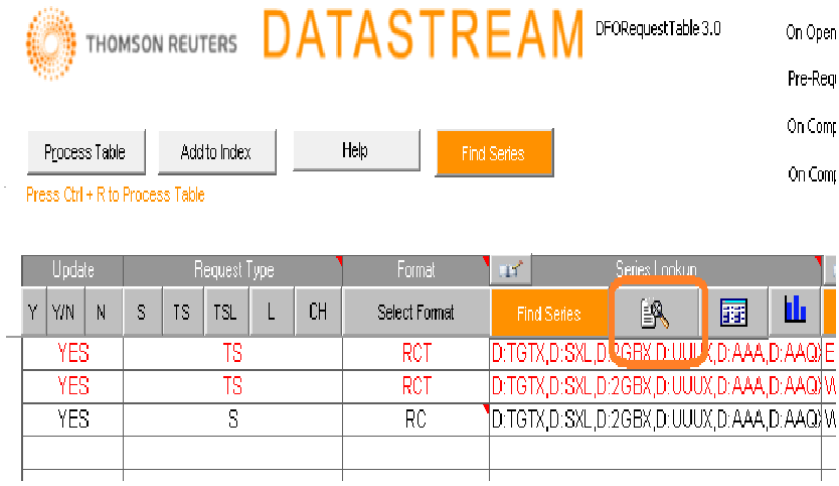

Figure 16: Integrating lists

Since the Datastream service was only purchased and not developed by Thomson Reuters, not all firms/securities have a Reuters Instrument Code assigned to them. As a result, it is possible that some of the imported RICs will not be recognized and you will run into an error message when attempting to process the request. It is possible however, to simply ignore this error message and proceed with the RICs that are recognized (it is not necessary to manually remove the unrecognized firms from the sample). In case that dropping the observations that are missing RICs significantly affects your analysis, it is advisable to look for alternative identifiers.

4 Common pitfalls

While working with commercial databases has a wide range of benefits, it also brings some aspects with it on which you will need to exercise caution. I have tried to compile the problems that most frequently occur down below.

4.1 Overestimating the qualities of commercial databases

Commercial databases typically have a wide coverage and are frequently updated. Yet, for almost all subsamples, their coverage is likely incomplete and information is not guaranteed to be up-to-date. Additionally, they are also error-prone. This is evidenced by the fact that collecting the same sample from two databases will almost always yield differing values on the same variables for a subset of companies. Unfortunately, you have very few ways to actually address these limitations. Two possible approaches are the collection of data from multiple sources to increase the coverage and addressing the limitations directly in your paper, i.e., not overselling the results that your data yielded.

4.2 Misunderstanding/not knowing data definitions

You can retrieve a multitude of data items from the database but might not be able to distinguish between all of them as they are often similarly named. The first step to making sure that your data item choice is in line with your objectives is that you check whether you know what the variable should be called in theory. But even then, some item names might seem ambiguous to you. This could either be due to imprecise terminology on the part of Thomson Reuters or to the fact that they generate multiple variants of the same basic variable. In these cases, you should check whether Thomson Reuters provides a crisp definition of the data item and additionally try to replicate the numbers for a few firms in your sample by hand. Replicating numbers unfortunately does not always work since database providers sometimes adjust values gathered from financial statements according to their internal methods. Typically, these methods are not disclosed to individuals outside of the provider's firm. In the case that you cannot obtain a reasonable level of confidence that the data item meets your informational needs, it is advisable to refrain from using said item and instead search for an alternative.
A similar issue arises from industry-specific or market-specific variables. These variables might have names that are similar or identical to their more general counterparts, but are only covered for firms operating within one industry or market. Fortunately, identifying these variables is typically relatively straightforward, as retrieving them will generate a lot of missing values.

4.3 Using variables with differing currencies, units or scales

This group of issues applies not only to the use of commercial databases, but to all empirical research. The easiest way of avoiding these issues is to evaluate the nature of the values at the time of retrieval and then write down the definition of the data item including the unit,

currency and scale that were used. At least for the currency, it might also be advisable to explicitly state it when building the Excel formula, so that you can later check on what you actually used.

4.4 Messing up the data set after retrieving it

This is an issue that arises in later steps of the research process. As you have already obtained an Excel dataset, it may be tempting to use this very file for the transformation of data and for conducting your analyses. However, this is an error-prone approach that might render your entire data set useless. For example, removing duplicates from your data set in an incorrect way could shift the identifiers away from the related firm data. Also, since Excel does not record a history of your changes after closing a session, you might not remember which changes you made to the file. It is best to use an external program, i.e., a statistics package like stata or RStudio, for your analyses since the code you use to conduct the analyses provides a form of documenting the changes you made.
At the very least, you should always keep a copy of your raw, untouched request data so that you can start from square one in the worst case [1].

4.5 Structuring data in an impractical way

It is very unlikely that your research design remains unchanged from the time you make your first request to the point when you finish your analyses. From experience, the data you need will change multiple times during your work. Common adjustments to the data set include amending the length of the time series, dropping variables or firms from the analyses or including new ones. You will of course not be able to anticipate all of these alterations, so you should structure your data set in a way that allows you to make multiple adjustments at later stages without having to dedicate too much time to it. Additionally, it can be benefitial to already think about what data structure best fits your analysis. One example of this would be to set up panel data in a wide format so that you can transpose it to long format with just one stata command later on.

[1] Furthermore, you have to make your raw data available to the university when handing in your thesis, so keeping a copy of it is necessary anyway.