vwd:

vwd data analytics XL
Manual

Version 4.3.0.6
12/12/2019

vwd:

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1. Manual

1.1. First start

Upon starting Microsoft Excel the add-in vwd data analytics XL will be loaded automatically, with a new menu item vwd data analytics XL available.
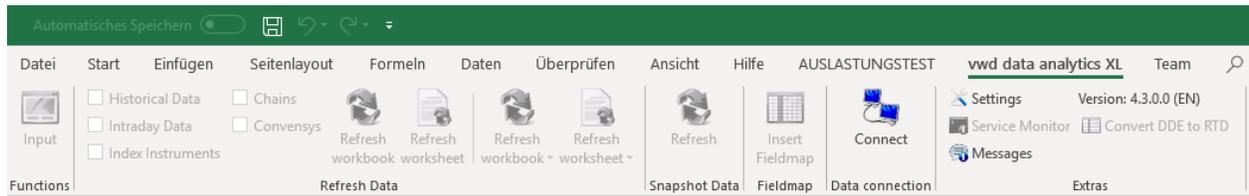
Fig. 1 Menu item *vwd data analytics XL*

At this time the add-in has been initialised, but no data link has yet been established.

Select *Settings* in *Extras*.
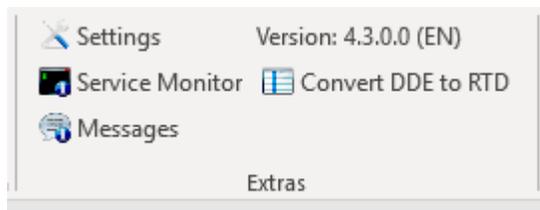
Fig. 2 Retrieve settings

The following dialogue will appear:
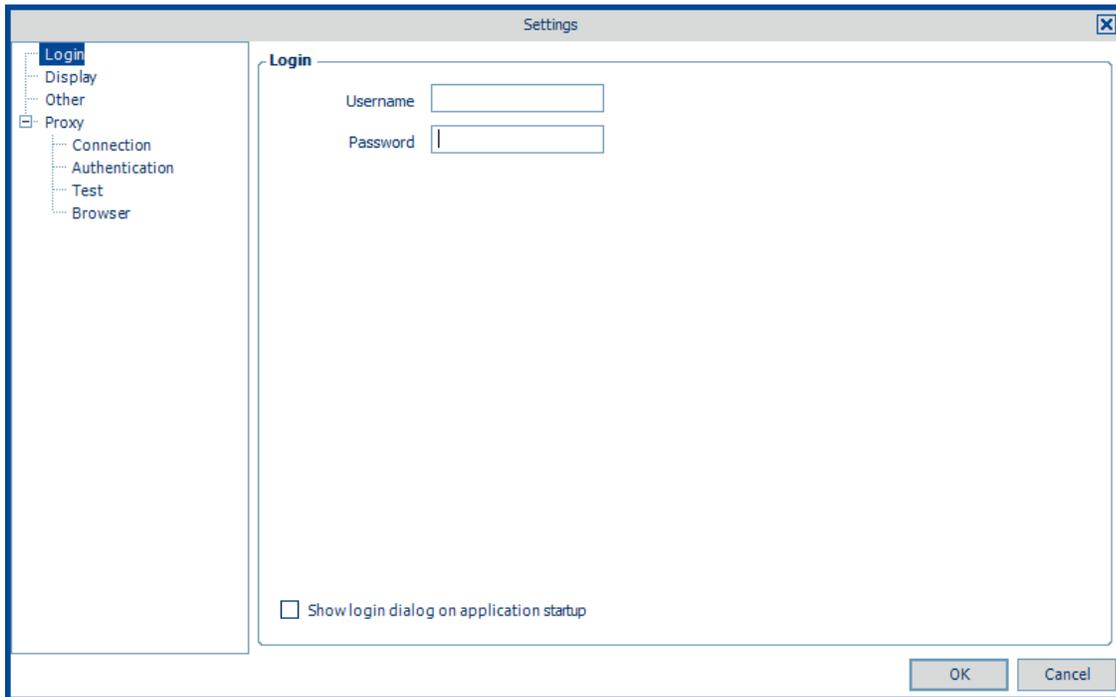
Fig. 3 Settings dialogue „user data"

Enter the user data to access *vwd market manager*. Please respect upper- and lowercase letters.

If a proxy is currently running, click *Connection* at the left-hand side of the dialogue.

When using an authentication switch to *Authentication*.

Fig. 5 Settings dialogue proxy authentication

If necessary, the *User Agent* can be edited here.

![vwd:]

Fig. 6 Settings dialogue proxy browser

To test the proxy data switch to *Test*. If you enter a URL and click on *Test* you can check whether a connection has been established successfully.
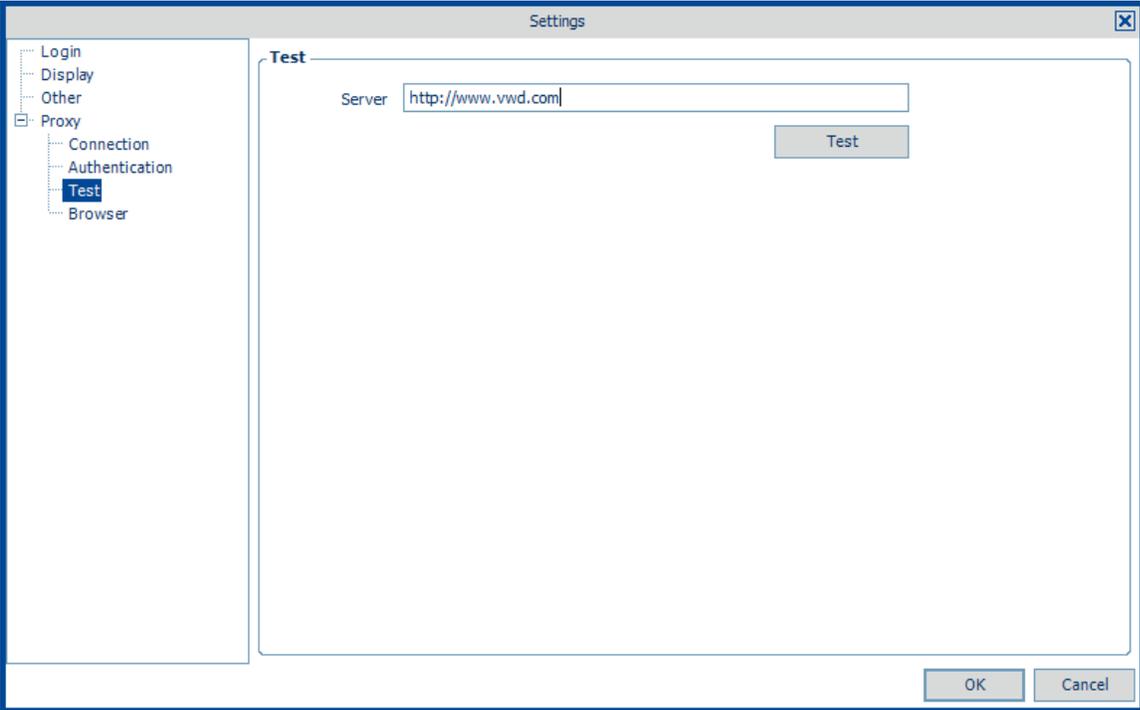
Fig. 7 Dialogue proxy test

If a connection was successfully established the following note will appear:

Fig. 8 Proxy test (successful)
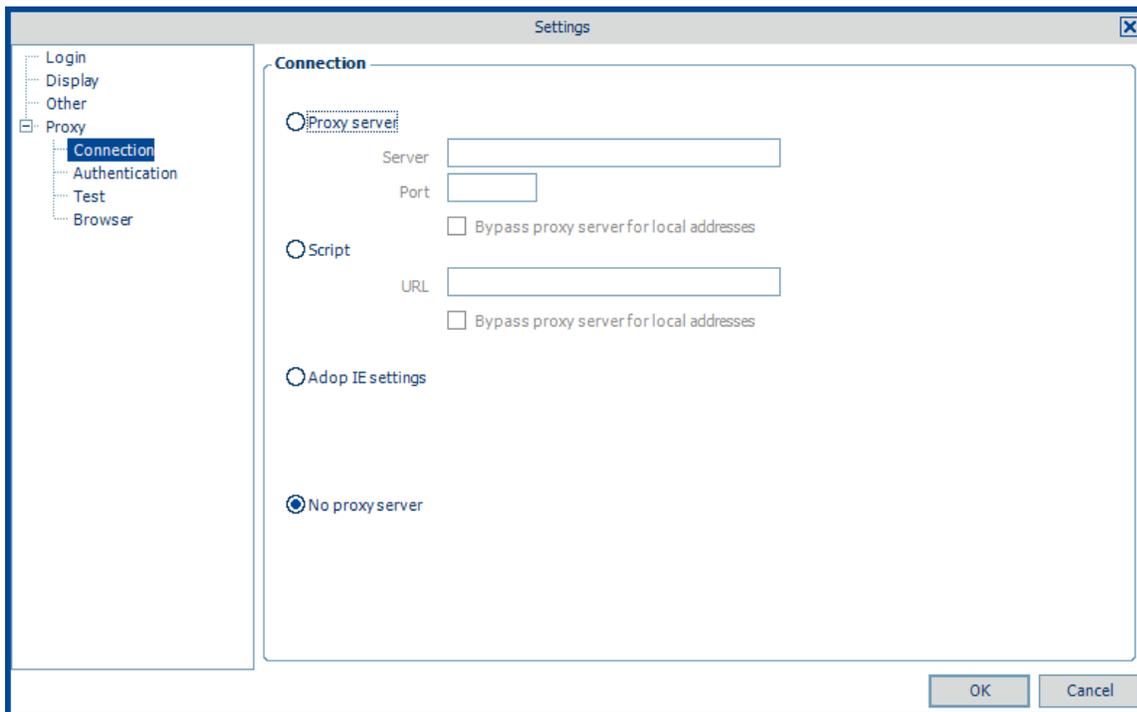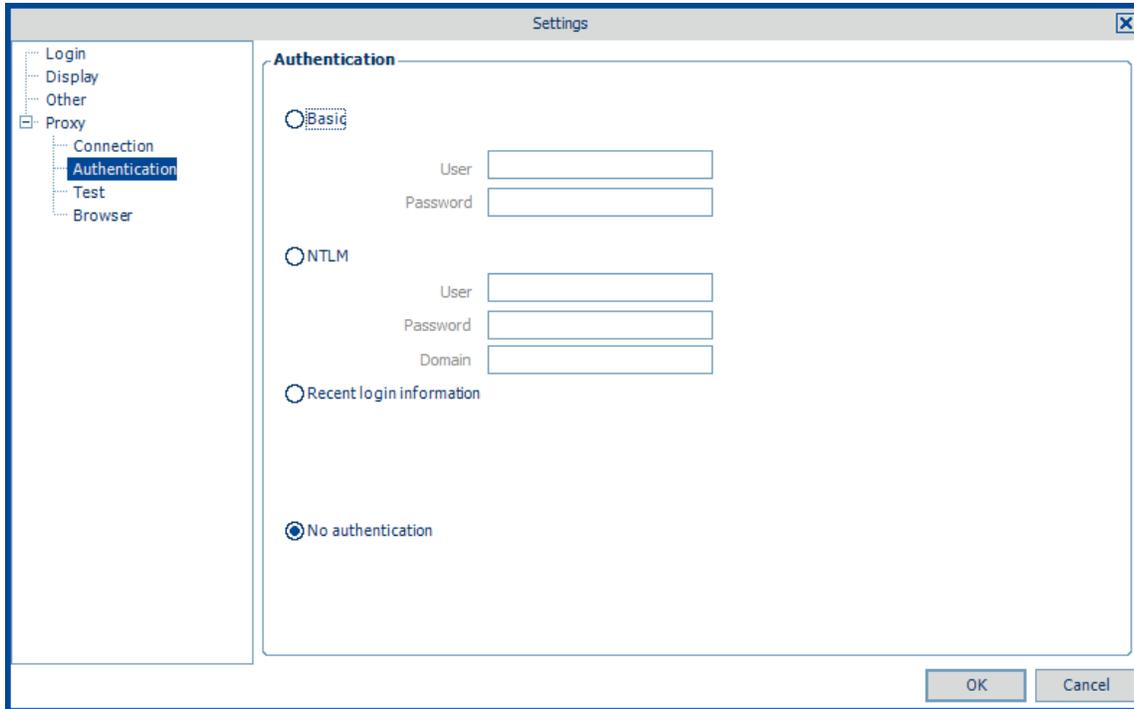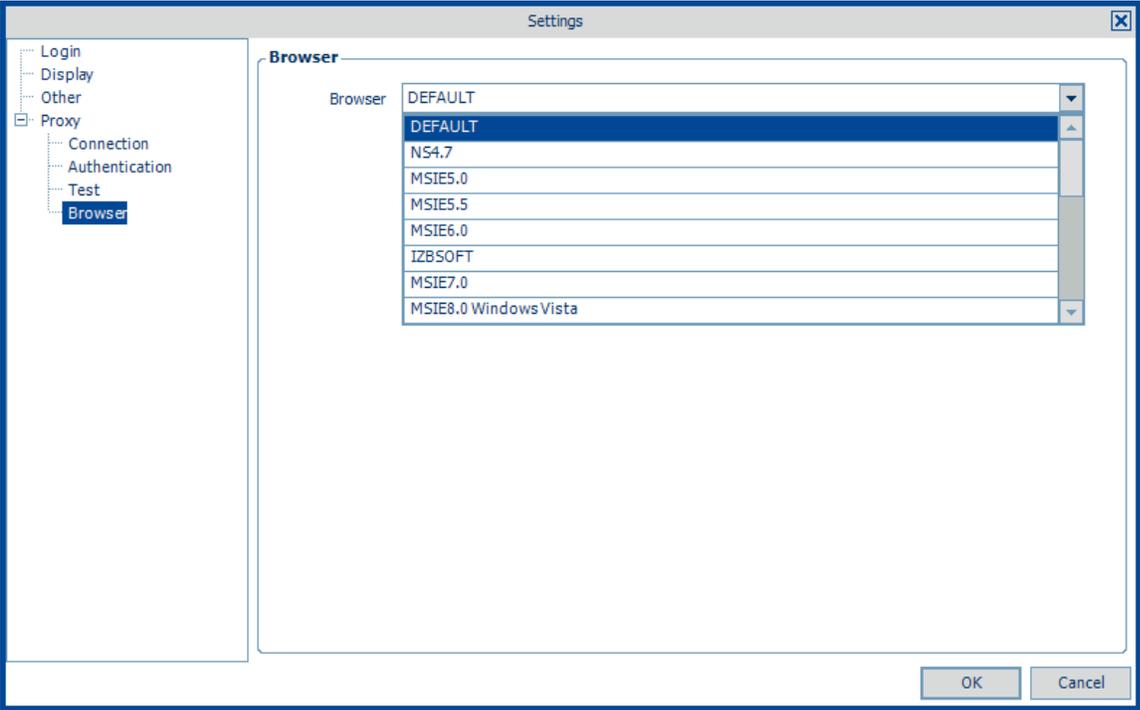
If a connection could **not** be established the following note will appear:
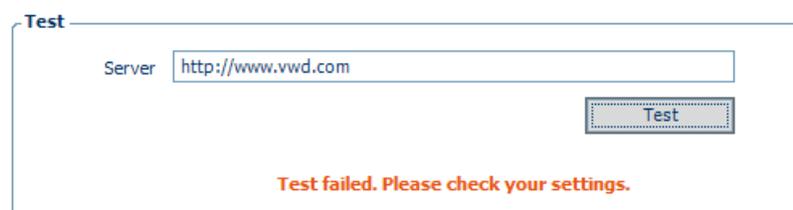
Fig. 9 Proxy test (failed)

If no connection could be established, please double-check your entries.

Note:
This test only checks the access to the entered URL on port 80, NOT the availability of other ports or ip-ranges, so a positive test is no guarantee for a successful connection with the vwd backend.

After entering your user and configuration data, click on *OK*. You can edit your entries anytime if necessary.

To establish the data connection please click *Connect*.
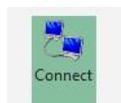
Fig. 10 Establish data connection

A data connection to vwd will be established. When the connection is successful, the push-button of the add-inn will be activated.

Fig. 11 Activated push-button after successful data connection

The installation of the *vwd data analytics XL* add-in is now completed.
The data connection will be kept running until Excel is shut down.

1.2. Menu vwd data analytics XL

The menu bar of *vwd data analytics XL* is sub-divided in six sections:

1) **Functions**
   With a click on the button *Input* you open the input dialogue for functions like „Historical Data" or „Intraday Data".

2) **Refresh data**
   In the „Refresh" section you find the buttons to refresh data for the selected functions.

3) **Convensys company data**
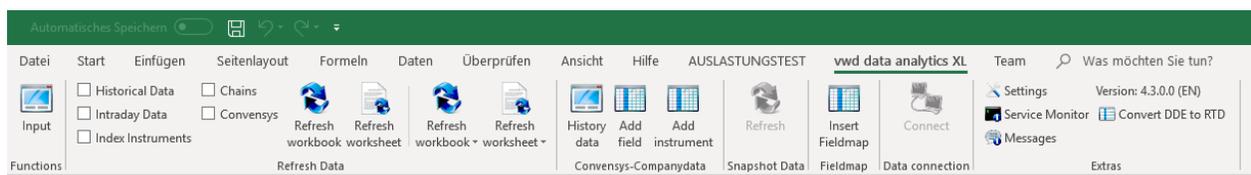   Via the buttons displayed in this pane you can access the input dialogues to retrieve Convensys company data.

4) **Snapshot data**
   Refreshes data received in „pull" mode (see 1.7).

5) **Fieldmap**
   Button to insert fieldmap into an Excel sheet.

6) **Data connection**
   Button to connect to vwd backend manually.

7) **Extras**
   Displays the current *vwd data analytics XL* version number.
   Here you edit your settings, open the service monitor or look for messages.

1.3. Data connection

Via the menu item "Data connection" you can connect to the vwd backend manually by clicking on the button. An existing data connection is required to use additional functions.

If the data connection should be affected automatically when starting Excel, you can set this in the preferences.

1.4. Functions of vwd data analytics XL

To access DAXL functions click the *Input* button from the *vwd data analytics XL* menu.

Fig. 12 Functions - Input

In the dialogue that appears, you can edit different functions such as the retrieval of historical data:
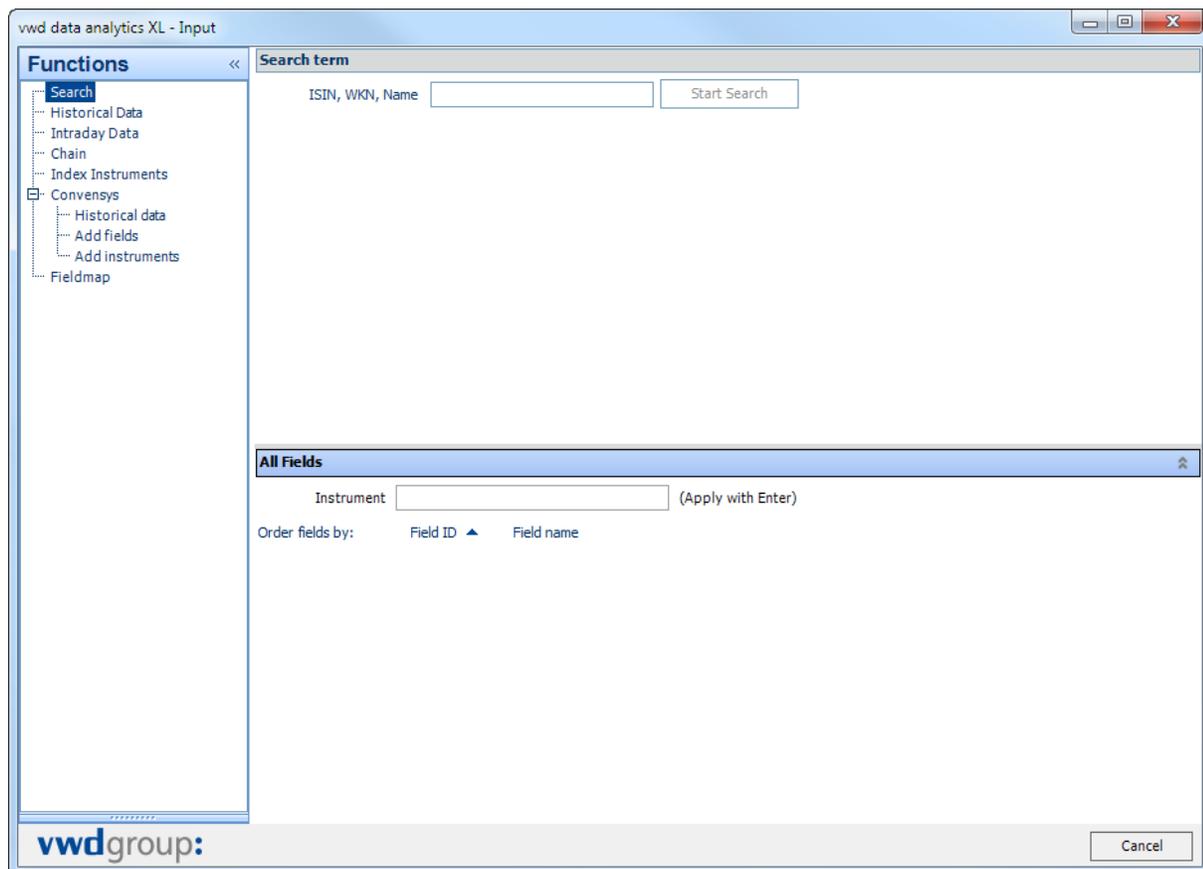
Fig. 13 Input window *vwd data analytics XL*

Read the following sections for details about the different functions.

1.4.1. Search

By entering an ISIN, WKN or name, you can search for a vwd instrument.

The result is displayed in tabs below the input field. The tabs are divided into the existing vwd security types (asset classes).
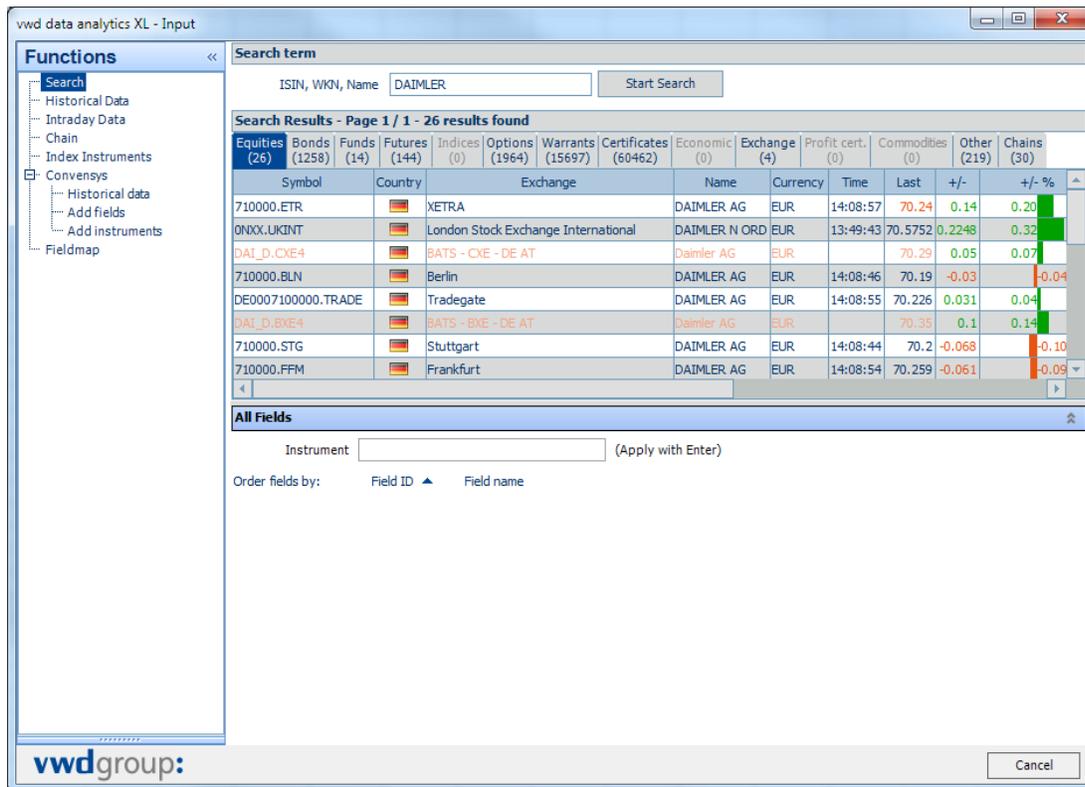
Fig. 14 Searching for "Daimler"

If the search results in too many hits, a scrolling function appears below the list.
Using drag & drop you can add the data from the list to your Excel sheet.

Note:
With CTRL, ALT and left mouse-button pressed you can drag a single field from the result list into a cell.
Using the SHIFT key several rows (instruments) can be selected simultaneously.

The dynamic instrument fields are referenced using a formula in the cell.
The formula is always set up as follows:

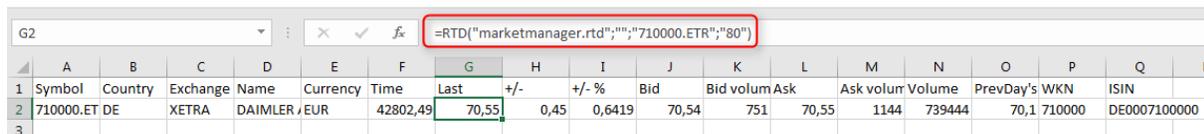*=RTD("marketmanager.rtd";"";"**Instrument**";"**Field number**")*

Fig. 15 Formula for dynamic instrument field

Note:
A formula must not necessarily be created using the input mask. The formula can also be entered directly.

As seen in Fig. 45 the exchange time (next to *Last*) field is not formatted. All times and dates have to be formatted manually via the standard Excel functions.

It is also possible to copy a particular field of an instrument from the *All fields* section to Excel.
There you must either drag & drop an instrument or enter a specific mnemonic (vwd symbol) into the input field.
Then all fields which are available for the selected instrument will be displayed with their current values.

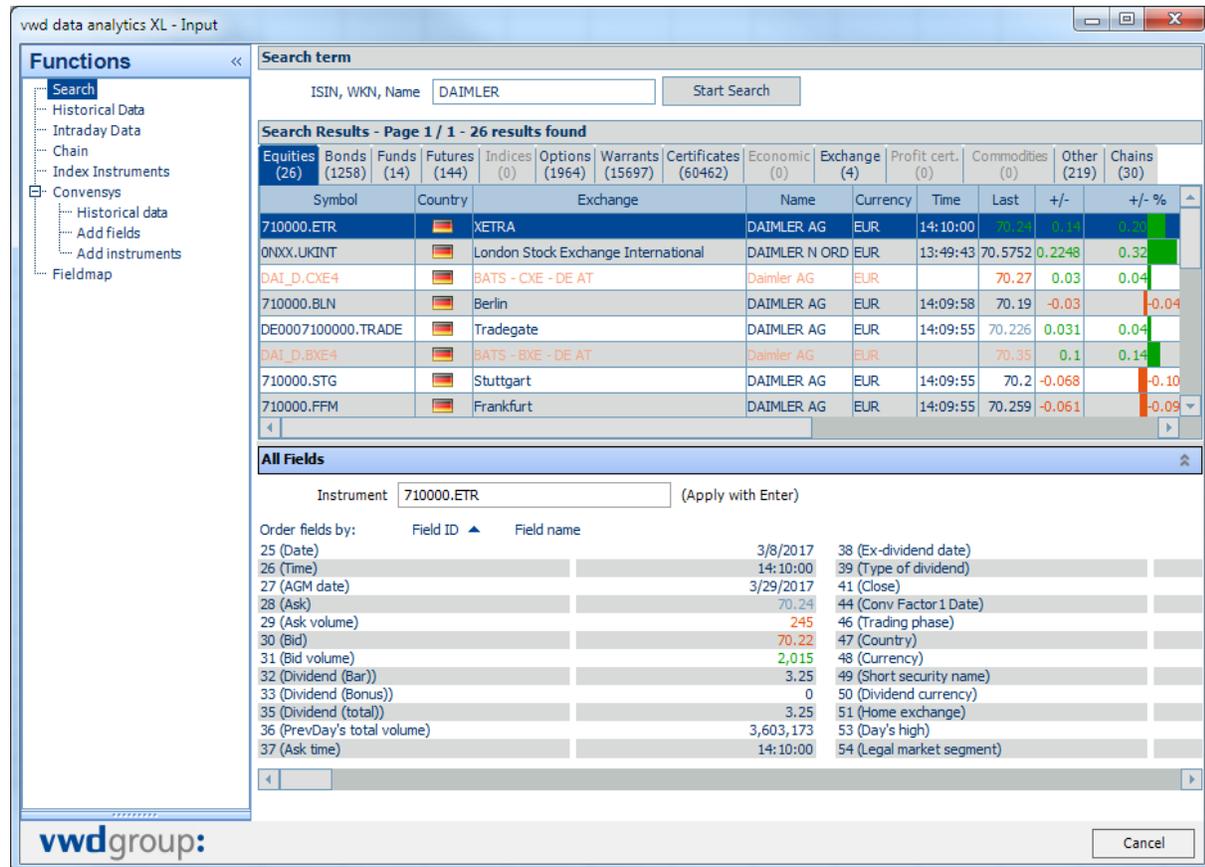Fig. 16 Display of all fieldes for vwd symbol 710000.ETR

To import a field from the *All Fields* list to Excel drag it to a cell via drag & drop. The field name and value will be imported.
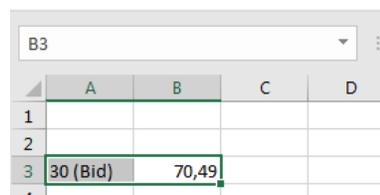
Fig. 17 Import of a field to Excel

Note:
If you want to add all fields of an instrument, hold down the CTRL key while selecting.
If you only want to add a single value of a field, hold the ALT key while selecting.

1.4.2. Historical data

This function enables the creation of historical time series for any vwd instrument and with various aggregations. Available time periods are Days, Weeks, Months, Quarters and Years, as well as one or more specified days of a year.

To enter a formula for historical data select a cell and then open the *functions* window. Select *historical data* on the left-hand side.

Fig. 18 Input window "Historical Data"

1.4.2.1. Defining parameters for Historical Data

The input mask to edit a historical data function consists of several sections, some of which are optional.
If the necessary data for the edition of the historical function are incomplete or incorrect, a warning will be displayed.

Other functions described later in this document also have a status bar which displays any errors.

a) Request parameter

Fig. 19 Request parameter historical Data

This field is a mandatory field and must be filled to retrieve historical data. A vwd instrument must be entered here, as well as the maturity and aggregation. When entering a valid vwd instrument the name will be displayed.

Several different aggregations are available via the dropdown menu:

- Day
- Week
- Month
- Quartal
- Year

b) Days

Fig. 20 Filter *Days*

The filters *Days* are only available if you have selected the aggregation *Day*. For all other aggregations this section is hidden.
To set filters you must first select the option *Set filter*, then the various filter options will be displayed.

Fig. 21 Filter *Days* after enabling

Using the *Days* filter you can edit for which days in a certain period quotes should be displayed.

Fig. 22 Filter option *Monday*

The example in fig. 25 shows a configuration that only retrieves data for Mondays within the specified time period.
You can also set multiple filters, for example to show the week's opening and end price.

Fig. 23 Filter options *First* and *Last Day of the Week*

c) **Data options**

Fig. 24 Data options

Via data options you can edit how the retrieved data will be processed.

Option	Significance
Fill up with last rate	If there is a date without price (holidays, weekends) within the desired period, the price of this date will be filled up with the last valid price.
Fill up with N/A	If there is a date without price (holidays, weekends) within the desired period, the price of this date will be filled up with 'N/A' (Excel function = NA()).
Fill up with empty values	If there is a date without price (holidays, weekends) within the desired period, the price of this date will be displayed as a blank cell.
Sort descending	Descending order of the time series by date.
Dividends	Time series is displayed with dividends taken into account.
Corporate Actions	Time series is displayed with corporate actions taken into account.
Average	The average function calculates the average value of the retrieved fields over the period. The result is displayed in a single row. The average cannot be applied to funds and LME instruments. The fields "open", "high", "low", "close" and "volume" are available. The data options "Fill up with N/A", "Fill up with empty values" and "Sort descending" are not available in combination with averages. The average function can be used with all aggregations and days filters.

d)   **Output options**

Fig. 25 Output options

Clear target cells	The contents of all columns of the target area of the function will be deleted from the first line of the target range on.
Without headres in function row	The resulting data are issued directly next to the function cell without generating headlines.
Function text (optional)	Optional text that will be displayed instead of the function.

e)   **Output fields**
Depending on the type of instrument (SecurityType) different output fields are available for the display of historical data.
Fields not available will disappear after entering an instrument in the area *Request parameter*.

If the entered instrument is not a fund or an LME instrument, the standard fields are offered:

Fig. 26 Standard output fields

Note:
If you have chosen the option "yield", the return of the instrument is displayed as a price field in the output.

If the entered instrument is a fund, the following output fields are available:

Fig. 27 Output fields for *funds*

If the entered instrument is an LME instrument, the selection of the output fields depends on the subtype.
For an LME composite instrument, the following output fields are available:

Fig. 28 Output fields for *LME* (LME-Composite)

If the LME instrument is an LME warehouse instrument, you can choose from the following output fields:

Fig. 29 Output fields for *LME* (LME-Warehouse)

When the input of the function is finished you can apply it to the selected cell with a click on the button *OK* or *Apply*. The input dialog stays open when clicking *Apply*.
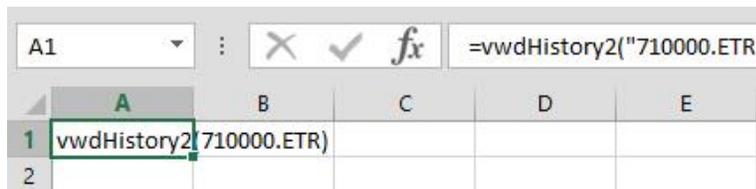
Fig. 30 Historical function inserted in Excel

The execution of the function is described in section 1.5 Update data.

Fig. 31 Example "Historical Data"

1.4.2.2. Alternative input of a historic formula in Excel

Entering a historical function must not necessarily be done via the *vwd data analytics XL* input dialogue. You can create such a function with the standard Excel Tools (Excel functions, VBA) just as well.
To this end find a description of the parameters as follows.

vwd:

Attention!
Since the function has a large number of parameters and variations of parameters, the input of the function should generally be done via the input dialogue to avoid incorrect entries
In any case the parameters must be filled in completely in the indicated order with valid values.

Parameter	Description	Value
vwdInstrument	vwd instrument	all vwd instruments.
DateFrom	Date from…	Date in the format „DD.MM.YYYY" or Excel Date function (e.g. „TODAY()") **Attention!** **If the date is given as text, the date format must correlate to the language setting of Excel.** **Using language en-US a date in the format „M/d/yyyy"** **(„1/22/2011") would be appropriate.**
DateTo	Date to…	see DateFrom.
DayAggregation	Time series with one price/day	1 – Enable 0 – Disable All other parameters for the aggregation must be set to 0.
WeekAggregation	Time series with aggregation „week"	1 – Enable 0 – Disable All other parameters for the aggregation must be set to 0.
MonthAggregation	Time series with aggregation „month"	1 – Enable 0 – Disable All other parameters for the aggregation must be set to 0.
YearAggregation	Time series with aggregation „year"	1 – Enable 0 – Disable All other parameters for the aggregation must be set to 0.
SortDescending	Data sort mode ascending or descending.	True – Enable False – Disable
FillEmptyData	Parameter whether missing prices should be filled	True – Enable False – Disable
TargetCell	Start cell for data to be written	Excel cell reference **Example:** „A2" (or A2) – time series will start with cell A2 of the current work sheet „Sheet3!A2" – time series will start with cell A2 of the work sheet „Sheet3"
OutputFormatNonFunds	Output fields for Non-Fund instruments	For the output fields different formats are available: a) **LME** For LME instruments of the type *LME-Composite* the following fields are available: D – Date PE – Provisional Evaluation FE – Final Evaluation UB – Unofficial Bid UA – Unofficial Ask OB – Official Bid OA – Official Ask

		T - Trade
		For LME instruments of the type *LME-Warehouse* the following fields are available:
		D – Date S – Settlement T – Trade
		LME-fields are displayed as follows:
		Example: LME:{D;PE;FE}
		With LME fields you can also retrieve the fields of other SecurityTypes (see b) instead of the special LME fields. These are specified as follows:
		Example: „DOHLCV"
		b) other SecurityTypes (excludes funds) D – Date O – Open H – High L – Low C – Close V – Volume
		BP – Price **or** BY – Yield
		Example: "DVCLHOBP" Time series includes: date, volume, close, low, high, open whereby close, low, high, and open are displayed as price.
		If the rate of return is desired when retrieving bonds "BY" must be specified. In this case open, high, low and close are displayed as yield.
		Note: The sequence of the specified fields is irrelevant. The output fields always display in the following order: date, open, high, low, close, volume
		You can also determin average values for the standard output fields (except „date") So if you enter „AVG:{O;H;L;C;V}" instead of „OHLCV" the average of the fields will be calculated and displayed in a total row.
		Note: A mixture of average function and normal output however is not supported.

OutputFormatFonds	Fund output fileds	R – Redemption price I – Issue price D – Date **Example:** „RID" Time series will include the Redemption Price, Issue Price and Date. **Note:** The sequence of the specified fields is irrelevant. The output fields always display in the following order: Date, Issue price, Redemption price
WithDividends	Take dividends into account.	True – Enable False – Disable
WithCorporateActions	Take Corporate Actions into account.	True – Enable False – Disable
AdvancedOptions	Advanced output options.	Specify options using the following format „Command":{„Parameter"}:

Specify options using the following format „Command":{„Parameter"}:

Command	Parameter	Description
FILL	LR	Fill missing values with last value
FILL	NA	Fill missing values with NA
FILL	EMPTY	Fill missing values with empty value
CLEAR	TRUE	Delete Destination Cells
CLEAR	FALSE	Do not delete destination cells
DATE	FDOW	First Day Of Week
DATE	LDOW	Last Day Of Week
DATE	FDOM	First Day Of Month
DATE	LDOM	Last Day Of Month
DATE	FDOQ	First Day Of Quarter
DATE	LDOQ	Last Day Of Quarter
DATE	FDOY	First Day Of Year
DATE	LDOY	Last Day Of Year
DATE	MONDAY	MONDAY
DATE	TUESDAY	TUESDAY
DATE	WEDNESDAY	WEDNESDAY
DATE	THURSDAY	THURSDAY
DATE	FRIDAY	FRIDAY
DATE	SATURDAY	SATURDAY
DATE	SUNDAY	SUNDAY
DAYS	FDOW	First Day Of Week
DAYS	LDOW	Last Day Of Week
DAYS	FDOM	First Day Of Month
DAYS	LDOM	Last Day Of Month
DAYS	FDOQ	First Day Of Quarter
DAYS	LDOQ	Last Day Of Quarter

		DAYS	FDOY	First Day Of Year
		DAYS	LDOY	Last Day Of Year
		DAYS	MO	MONDAY
		DAYS	TU	TUESDAY
		DAYS	WE	WEDNESDAY
		DAYS	TH	THURSDAY
		DAYS	FR	FRIDAY
		DAYS	SA	SATURDAY
		DAYS	SU	SUNDAY
		LINEWISE	TRUE	Output without headers.
		LINEWISE	FALSE	Output with headers.

Example:

"FILL:{EMPTY}CLEAR:{TRUE}"

- Fill missing values with empty cells
- Clear destination cells.

"DATE:{LDOM}FILL:{NA}CLEAR:{FALSE}")

- Last Day of the Month
- Fill missing values with "NA"
- Do not clear destination cells

"DAYS:{FDOWLDOW}FILL:{LR}CLEAR:{TRUE}")

- Price from first day of week
- Price from last day of week
- Fill missing values with last valid Price
- Clear destination cells

"DAYS:{MOFR}FILL:{LR}CLEAR:{TRUE}")

- Price from Monday
- Price from Friday
- Fill missing values with last valid Price
- Clear destination cells

"DAYS:{MOFRFDOYLDOY}FILL:{EMPTY}CLEAR:{TRUE}")

- Price from Monday
- Price from Friday
- Price from first day of the year
- Price from lat day of the year
- Fill missing values with empty cells
- Clear destination cells

Function text (optional)	Optional text, displayed instead of function.	When filled, the manually entered text (e.g. "History Daimler" will be displayed instead of the standard text „=vwdHistory2(*Instrument*)".

1.4.2.3. Retrieving historical price with RTD

If you only need the historical close of an instrument for a particular day, you can do this using the RTD function. In this case the price data is retrieved without the need to initiate a manual data refresh.

The request then looks as follows:
=*RTD("marketmanager.rtd";"";"**HIST**";"**Instrument**";"**Date**")*

Example:
=*RTD("marketmanager.rtd";"";"HIST";"710000.ETR";"16.09.2015")*

The RTD function shown above provides the closing price of the 16.09.2015 for the symbol 710000.ETR (Daimler).

1.4.3. Intraday data

The function for intraday data allows to retrieve time series with smaller aggregations than in historical data for all vwd instruments.
To enter a formula for intraday data, select a cell and open the input dialog by pressing the button *Input*. Select the item *Intraday Data* from the menu to the left.

Fig. 32 Input dialogue *Intraday Data*

1.4.3.1. Required parameters for the function *Intraday Data*

The input window for a function to retrieve intraday data consists of the following sections:

a) **Request parameter**

Fig. 33 Request parameter Intraday Data

In this section you must specify a vwd instrument, the maturity and the aggregation. When entering a valid vwd instrument the name will be displayed.

The checkbox offers the following aggregations. Depending on your choice various output fields are available.

- *Tick by Tick*
  All ticks within the given timespan.
- *1, 2, 5 ,10, 15, 30, 60 minutes*
  Display of data with the aggregation 1 minute, 2 minutes etc.
- *Complete timespan*
  A single output row will be displayed for the complete timespan.
  From the data retrieved the first, highest, lowest and or last quote will be displayed depending on the fields selected. If "Volume" is chosen, the total volume over the selected timespan will be displayed.

b) **Output options**

Fig. 34 Output options Intraday Data

Clear target cells	The contents of all columns within the scope of the function are deleted from the start line of the target range.
Without headers in function row	The resulting data are issued directly next to the function cell without generating headlines.
Function text (optional)	Optional text that will be displayed instead of the function.

c) **Output fields**
   In the *output fields* section you can specify which fields should be displayd. Depending on the aggregation different fields are available.

If you choose the aggregation *Tick by Tick* the following fields are available:

Fig. 35 Output fields for aggregation *Tick by Tick*

When opting for *Complete timespan* the following fields are available:

Fig. 36 Output fields for aggregation *Complete timespan*

For all other aggregations the following fields are available:

Fig. 37 Output fields for other aggregations

You can also specify a function text here that will be displayed instead of the generated formula in Excel.

When the input of the function is finished you can apply it to the selected cell with a click on the button OK or Apply. The input dialog stays open when clicking Apply.

The execution of the function is described in section 1.5 Update data.

Fig. 38 Example for *Intraday Data* with aggregation *60 Minutes*

vwdIntradayHistory2(710000.ETR)

	DAIMLER AG Trade					DAIMLER AG Bid						DAIMLER AG Ask					
Time	Open	High	Low	Close	Volume	Time	Open	High	Low	Close	Volume	Time	Open	High	Low	Close	Volume
11:00:00	69,78	69,84	69,56	69,65	129562	11:00:00	69,78	69,84	69,54	69,64	2126587	11:00:00	69,79	69,86	69,56	69,65	2031706
12:00:00	69,64	69,73	69,57	69,72	96656	12:00:00	69,63	69,72	69,57	69,7	1784743	12:00:00	69,65	69,74	69,58	69,72	2330437
13:00:00	69,7	69,79	69,68	69,69	99158	13:00:00	69,7	69,78	69,67	69,68	1586407	13:00:00	69,72	69,79	69,69	69,7	2532865
14:00:00	69,69	69,77	69,62	69,66	168169	14:00:00	69,68	69,76	69,62	69,66	3863649	14:00:00	69,69	69,77	69,63	69,67	2367543
15:00:00	69,67	69,72	69,52	69,65	132413	15:00:00	69,66	69,72	69,52	69,64	3242385	15:00:00	69,67	69,73	69,53	69,67	3895627
16:00:00	69,66	69,66	69,29	69,38	366425	16:00:00	69,64	69,65	69,29	69,37	5054696	16:00:00	69,67	69,67	69,3	69,39	3424008
17:00:00	69,37	69,56	69,34	69,54	708935	17:00:00		69,55	69,33	69,5	2261293	17:00:00	69,38	69,56	69,35	69,52	2007430
09:00:00	69,77	69,98	69,45	69,98	372593	09:00:00	69,75	69,98	69,46	69,96	1009057	09:00:00	69,78	69,99	69,48	69,99	1142071
10:00:00	69,99	70,23	69,94	70,05	343875	10:00:00	69,98	70,22	69,94	70,04	2333295	10:00:00	69,99	70,23	69,96	70,05	3891773
11:00:00	70,04	70,27	70,02	70,24	276521	11:00:00	70,04	70,27	70,01	70,23	2716889	11:00:00	70,05	70,28	70,03	70,24	4293938
12:00:00	70,23	70,35	70,11	70,24	233199	12:00:00	70,23	70,34	70,1	70,24	2703885	12:00:00	70,24	70,35	70,11	70,25	3636878
13:00:00	70,22	70,28	70,09	70,18	173745	13:00:00	70,21	70,27	70,09	70,17	2066960	13:00:00	70,22	70,28	70,1	70,18	2758949
14:00:00	70,18	70,2	70,13	70,17	126753	14:00:00	70,17	70,2	70,12	70,16	2320079	14:00:00	70,18	70,21	70,13	70,17	2623055
15:00:00	70,18	70,22	69,98	70,12	214396	15:00:00	70,17	70,21	69,98	70,11	3436414	15:00:00	70,18	70,23	69,99	70,13	4493155
16:00:00	70,13	70,5	70,12	70,32	340406	16:00:00	70,12	70,49	70,11	70,32	4039692	16:00:00	70,14	70,5	70,12	70,33	5080618
17:00:00	70,33	70,41	70,1	70,1	1521685	17:00:00	70,32	70,41	70,18	70,23	2205912	17:00:00	70,34	70,42	70,19	70,25	2245675
09:00:00	70	70,27	69,78	70,23	341702	09:00:00	70	70,26	69,75	70,22	970704	09:00:00	70,02	70,27	69,8	70,24	983485
10:00:00	70,23	70,32	70,22	70,3	28356	10:00:00	70,22	70,31	70,21	70,3	416639	10:00:00	70,23	70,33	70,22	70,31	440840

Fig. 39 Example for *Intraday Data* with aggregation *Complete timespan*

vwdIntradayHistoryAggregated(710000.ETR)

DAIMLER AG NA O.N.

Open Trade	High Trade	Low Trade	Close Trade	Volume Trade	Open Bid	High Bid	Low Bid	Close Bid	Volume Bid	Open Ask	High Ask	Low Ask	Close Ask	Volume Ask
11:45:36	70,5	69,29	70,3	5910079	69,48	11:45:36	69,29	70,29	46742934	69,5	70,5	07:12:00	70,3	53050237

Fig. 40 Example for *Intraday Data* with aggregation *Tick by Tick*

Formula bar: `=vwdIntradayHistory2("710000.ETR";"08.03.2017 10:10:22";"08.03.2017 12:10:22";0;TRUE;TRUE;TRUE;"A2`

vwdIntradayHistory2(710000.ETR)

	DAIMLER AG Trade				DAIMLER AG Bid				DAIMLER AG Ask			
Time	Last	Volume	High/Low	Time	Last	Volume	High/Low	Time	Last	Volume	High/Low
10:10:24	70,29	152		10:10:22	70,29	1163		10:10:22	70,31	857	
10:10:24	70,29	15		10:10:22	70,29	1063		10:10:23	70,3	628	Low
10:10:26	70,29	184		10:10:23	70,29	351		10:10:24	70,3	712	
10:10:29	70,3	150	High	10:10:24	70,29	184		10:10:25	70,31	1096	
10:10:47	70,29	109		10:10:24	70,29	334		10:10:26	70,3	1029	
10:10:47	70,29	61		10:10:25	70,29	184		10:10:26	70,3	1179	
10:10:47	70,3	183		10:10:25	70,29	655		10:10:27	70,3	879	
10:10:50	70,28	49	Low	10:10:26	70,28	790	Low	10:10:28	70,3	1049	
10:10:50	70,28	20		10:10:26	70,28	462		10:10:29	70,31	208	
10:10:50	70,28	337		10:10:27	70,28	890		10:10:29	70,31	208	
10:10:52	70,27	48	Low	10:10:28	70,28	590		10:10:30	70,31	108	
10:10:52	70,27	45		10:10:28	70,28	840		10:10:31	70,31	186	
10:10:52	70,27	75		10:10:29	70,3	689	High	10:10:31	70,31	393	
10:10:52	70,27	151		10:10:29	70,3	650		10:10:32	70,31	1608	
10:10:53	70,27	3		10:10:30	70,3	804		10:10:33	70,31	1705	
10:10:53	70,27	100		10:10:31	70,3	704		10:10:33	70,31	721	
10:10:54	70,26	150	Low	10:10:31	70,3	154		10:10:35	70,31	336	
10:10:54	70,25	150	Low	10:10:32	70,29	450		10:10:36	70,31	657	
10:10:54	70,25	241		10:10:33	70,3	150		10:10:37	70,31	757	
10:11:11	70,26	102		10:10:34	70,29	650		10:10:38	70,3	749	

Note:
Retrieving Intraday Data easily leads to large data volumes. Always keep in mind to select a reasonable aggregation. Large data volumes lead to high bandwidth usage and thus corresponding load times!

1.4.3.2. Alternative input of an intraday formula in Excel

Entering an intraday function must not necessarily be done via the *vwd data analytics XL* input dialogue. You can create such a function with standard Excel Tools (Excel functions, VBA) just as well.
To this end find a description of the parameters as follows.

Attention!
Since the function has a large number of parameters and variations of parameters, the input of the function should generally be done via the input dialogue to avoid incorrect entries
In any case the parameters must be filled in completely in the indicated order with valid values

Parameter	Description	Value
vwdInstrument	vwd instrument	all vwd Instrumente.
DateFrom	Date from…	Date in the format „DD.MM.YYYY" or Excel Date function (e.g. „TODAY()") **Attention!** **If the date is given as text, the date format must correlate to the language setting of Excel.** **Using language en-US a date in the format „M/d/yyyy" („1/22/2011")** **would be appropriate.**
DateTo	Date to…	see DateFrom.
MinuteAggregation	Time series with indicated aggregation in minutes	Tick by Tick – display every tick 1 – 1 minute 2 – 2 minutes 5 – 5 minutes 10 – 10 minutes 15 – 15 minutes 30 – 30 minutes 60 – 60 minutes
WithTrade	Switch, whether trade fields should be displayed	True – Enable False – Disable
WithBid	Switch, whether bid fields should be displayed	True – Enable False – Disable
WithAsk	Switch, whether ask fields should be displayed	True – Enable False – Disable
TargetCell	Start cell for data to be written	Excel cell reference **Example:** „A2" (or A2) – time series will start with cell A2 of the current work sheet „Sheet3!A2" – time series will start with cell A2 of the work sheet „Sheet3"
OutputFormatTrade	Output fields Trade. If no fields are specified and *True* is enabled all fields will be displayed.	If *Tick by Tick* is selected the following fields are available: T – Time C – Close V – Volume F – High/Low Flag **Example:** „TCVF" If a *minute aggregation* is selected the following fields are available:

		T – Time O – Open H – High L – Low C – Close V – Volume **Example:** „TOHLCV" **Note:** The sequence of the specified fields is irrelevant. The output fields always display in the following order: Time, Open, High, Low, Close, Volume
OutputFormatBid	Output fields Bid. If no fields are specified and *True* is enabled all fields will be displayed.	see *OutputFormatTrade*
OutputFormatAsk	Output fields Ask. If no fields are specified and *True* is enabled all fields will be displayed.	see *OutputFormatTrade*
AdvancedOptions	Advanced option for the time series.	Specify options using the following format „Command":{„Parameter"}: <table><tr><td>Command</td><td>Parameter</td><td>Description</td></tr><tr><td>CLEAR</td><td>TRUE</td><td>Clear target cells</td></tr><tr><td>CLEAR</td><td>FALSE</td><td>Do not clear target cells</td></tr><tr><td>LINEWISE</td><td>TRUE</td><td>Output without headers.</td></tr><tr><td>LINEWISE</td><td>FALSE</td><td>Output with headers.</td></tr></table> **Example:** CLEAR:{TRUE} • Clear target area LINEWISE:{TRUE} • Output without headers

1.4.3.3. Alternative input of an intraday data formula - aggregated

The function to retrieve aggregated intraday data can also be created using the standard Excel functions (Excel functions, VBA) instead of the input dialogue.
To this end find a description of the parameters as follows:

Parameter	Description	Value
vwdInstrument	vwd instrument	all vwd instruments.
DateFrom	Date from…	Date in the format „DD.MM.YYYY" or Excel Date function (e.g. „TODAY()") **Attention!**

		If the date is given as text, the date format must correlate to the language setting of Excel. Using language en-US a date in the format „M/d/yyyy" („1/22/2011") would be appropriate.
DateTo	Date to…	see DateFrom.
TargetCell	Start cell for data to be written	Excel cell reference **Example:** „A2" (or A2) – time series will start with cell A2 of the current work sheet „Sheet3!A2" – time series will start with cell A2 of the work sheet „Sheet3"
FieldList	Output fields	The following fields are available: OT – Open Trade +T – High Trade -T – Low Trade CT – Close Trade VT – Volume Trade OB – Open Bid +B – High Bid -B – Low Bid CB – Close BId VB – Volume Bid OA – Open Ask +A – High Ask -A – Low Ask CA – Close Aslk VA – Volume Ask These fields are separated with ";" and thus allow an output in a specified order.
Function text (optional)	Optional text, displayed instead of function.	When filled, the manually entered text (e.g. "History Daimler" will be displayed instead of the standard text „=vwdHistory2(*Instrument*)".

1.4.4. Chains

A chain contains the logic of linking single instruments. With this symbol type you can request a chain of symbols easily. This function can be entered in the input window under the menu item *Chain*.
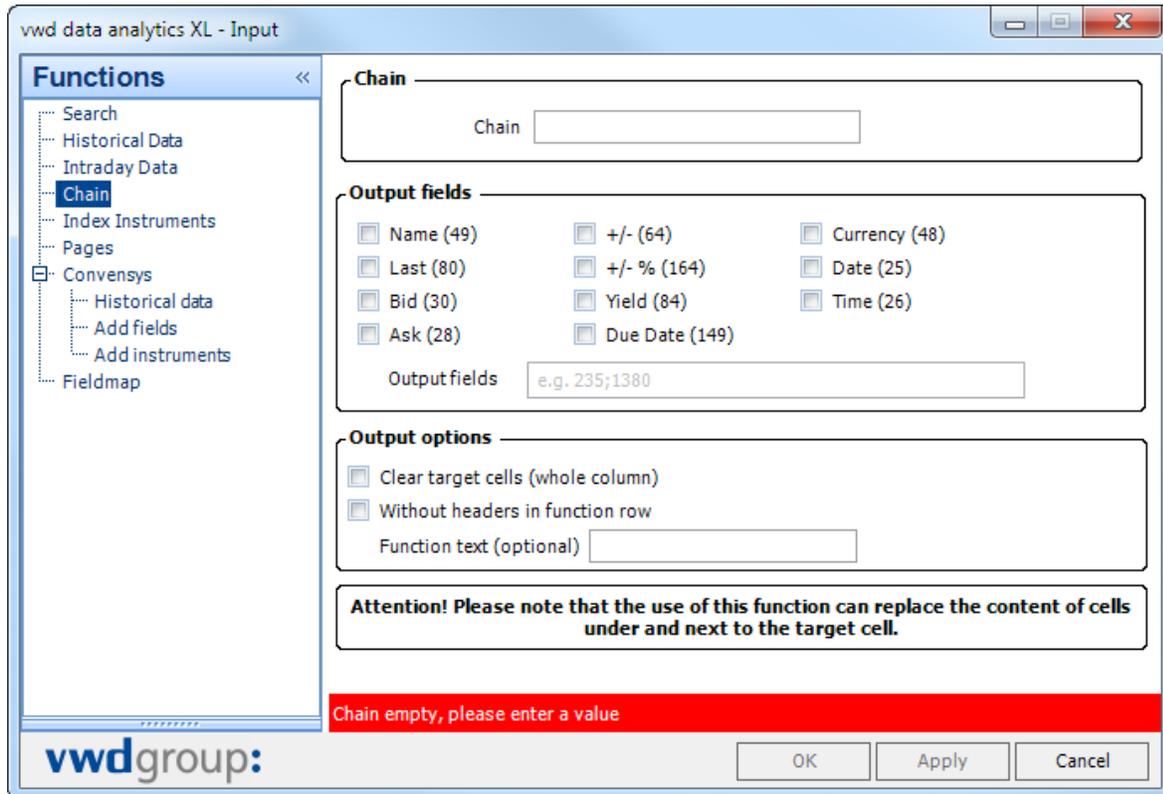
Fig. 41 Input dialogue *Chain*

1.4.4.1. Required parameters for the function *Chain*

The input window for a function to retrieve a chain consists of the following sections:

a) **Chain**
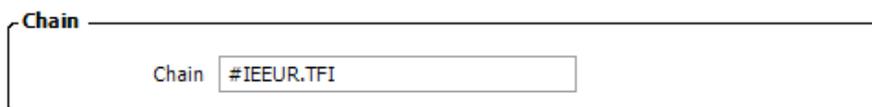
Fig. 42 Request parameter chain

In this section you have to specify a chain e.g. #IEEUR.TFI. The leading # in front of the chain can also be left out.

b) **Output fields**

Fig. 43 Output fields chain

In the output fields section you can define which predefined or individual output fields (separated by a ';') should be requested for each symbol that is contained in a chain.

c) **Output options**

Fig. 44 Output options chain

In the output options section you can define that the target columns will be cleared completely and if the result data should be written to Excel without headers what means. Also, you can enter a function text that should be displayed instead of the vwdChain (…) text.

When the input of the function is finished you can apply it to the selected cell with a click on the button OK or Apply. The input dialog stays open when clicking Apply.

The execution of the function is described in section 1.5 Update data.
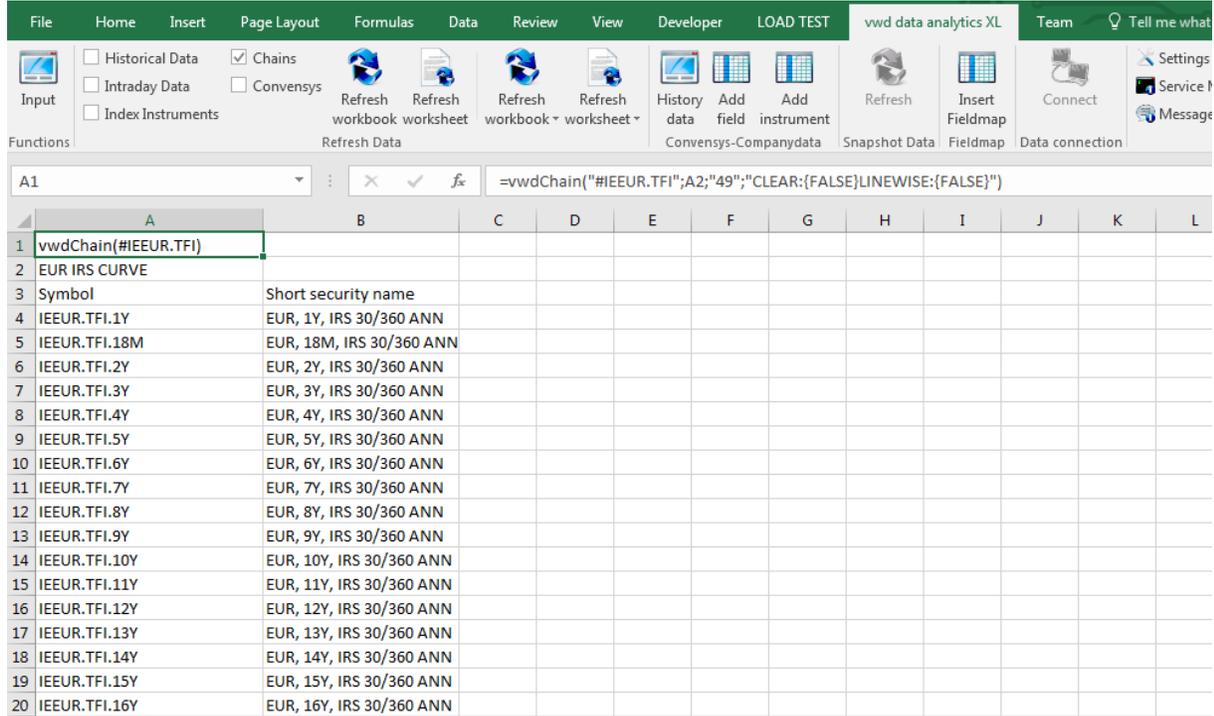
Fig. 45 Example output for chain #IEEUR.TFI

1.4.4.2. Alternative input of a chain formula in Excel

Entering an chain function must not necessarily be done via the *vwd data analytics XL* input dialogue. You can create such a function with standard Excel Tools (Excel functions, VBA) just as well.
To this end find a description of the parameters as follows.

Parameter	Description	Value
Chain	Chain	A vwd known chain.
TargetCell	Start cell for data to be written	Excel cell reference **Example:** „A2" (or A2) – chain data will start with cell A2 of the current work sheet „Sheet3!A2" – chain data will start with cell A2 of the work sheet „Sheet3"
FieldIdList (optional)	List of fields to be requested for each symbol in chain	a ‚;' separated list of field ids e.g. "49;80"
AdvancedOptions (optional)	Advanced option for the chain.	Specify options using the following format „Command":{„Parameter"}: Example table below. **Example:** CLEAR:{TRUE}

Command	Parameter	Description
CLEAR	TRUE	Clear target cells
CLEAR	FALSE	Do not clear target cells
LINEWISE	TRUE	Output without headers.
LINEWISE	FALSE	Output with headers.

		• Clear target area LINEWISE:{TRUE} Output without headers
FunctionText (optional)	Optional text, displayed instead of function.	When filled, the manually entered text (e.g. "Chain #IEEUR.TFI" will be displayed instead of the standard text „=vwdChain(…)".

1.4.5. Index instruments

With the query by index instruments it is possible to retrieve all instruments of an index. To do so the exact input of the index-instrument/vwd symbol is necessary. The function can be entered in the input window under the menu item Index instruments.
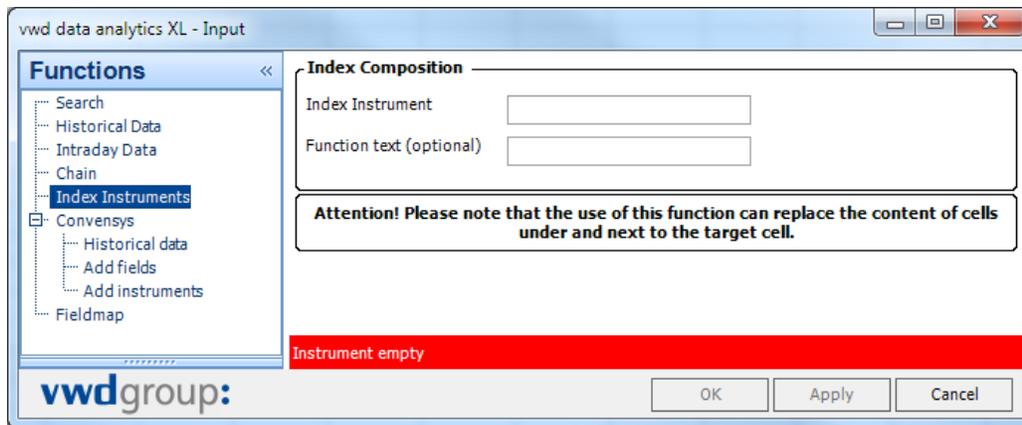
Fig. 46 Input dialogue *Index Instruments*

You can enter an alternative function via the *Function text* input box.

The execution of the function is described in section 1.5 Update data

1.4.6. Convensys company data

If you have the permission to access Convensys company data, the following menu items will be displayed:
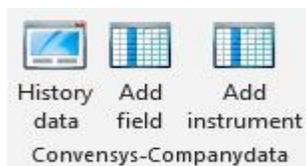
Fig. 47 Menu items Convensys

To retrieve Convensys company data select the menu item *Convensys\History data*.
Keep in mind that every Excel sheet can only display one template with historical data.
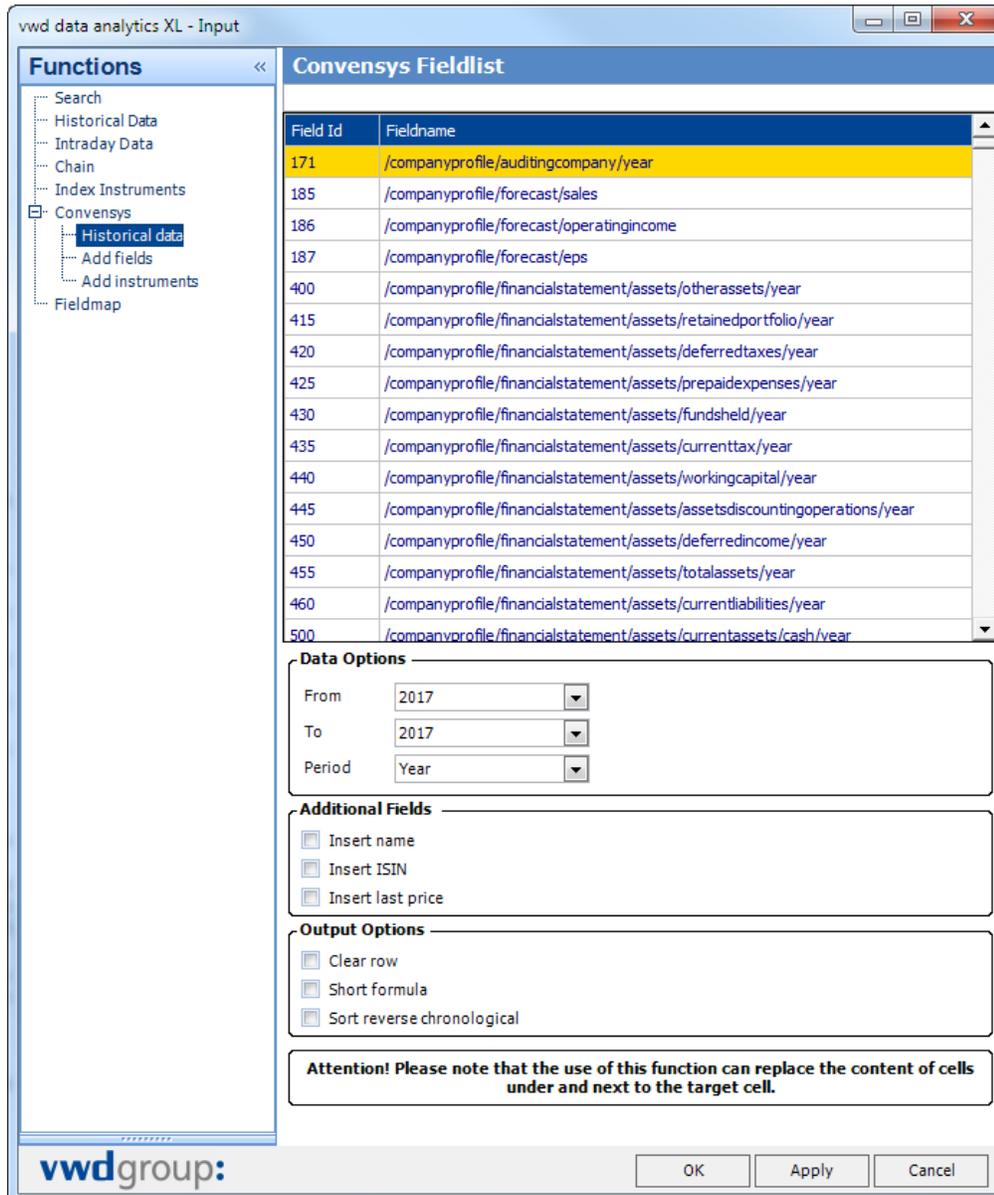
Fig. 48 Convensys-Historical data input dialogue

Available options/settings are:

Options/Settings:
- *Fieldname*
  Field selection for Convensys data to be retrieved, e.g. field 455 for financial statement – assets - total assets - year
- *From*
  Start date (year) for Convensys data to be retrieved, e.g. 2008.
- *To*
  End date (Year) for Convensys data to be retrieved, e.g. 2014.

- *Insert name*
  Inserts a column displaying the company name.
- *Insert ISIN*
  Inserts a column displaying the ISIN of the retrieved instrument.
- *Insert last price*
  Inserts a column displaying the current price (realtime).
- *Clear row*
  Clears a row when instrument is inserted.
- *Short formula*
  Setting to disable the mask generation, all parameters are included in a single formula
- *Period*
  Year   (display yearly data)
  Quartal   (display quarterly data)
  Short fiscal year   (display short fiscal year of data available)
- *Sort*
  Chronological   (sort data chronologically)
  Reverse chronological   (sort data reverse chronologically)

Note:
If options inserting columns into the Excel sheet are chosen, this will be processed in the following order:
- **Name**
- **ISIN**
- **Last price**

The symbol column will always be inserted behind Name and ISIN.

Enter a fragment of the fieldname or field Id into the input box „fieldname" to quickly find a field. To start your search confirm with *Enter.* You will receive a list with results matching your query.
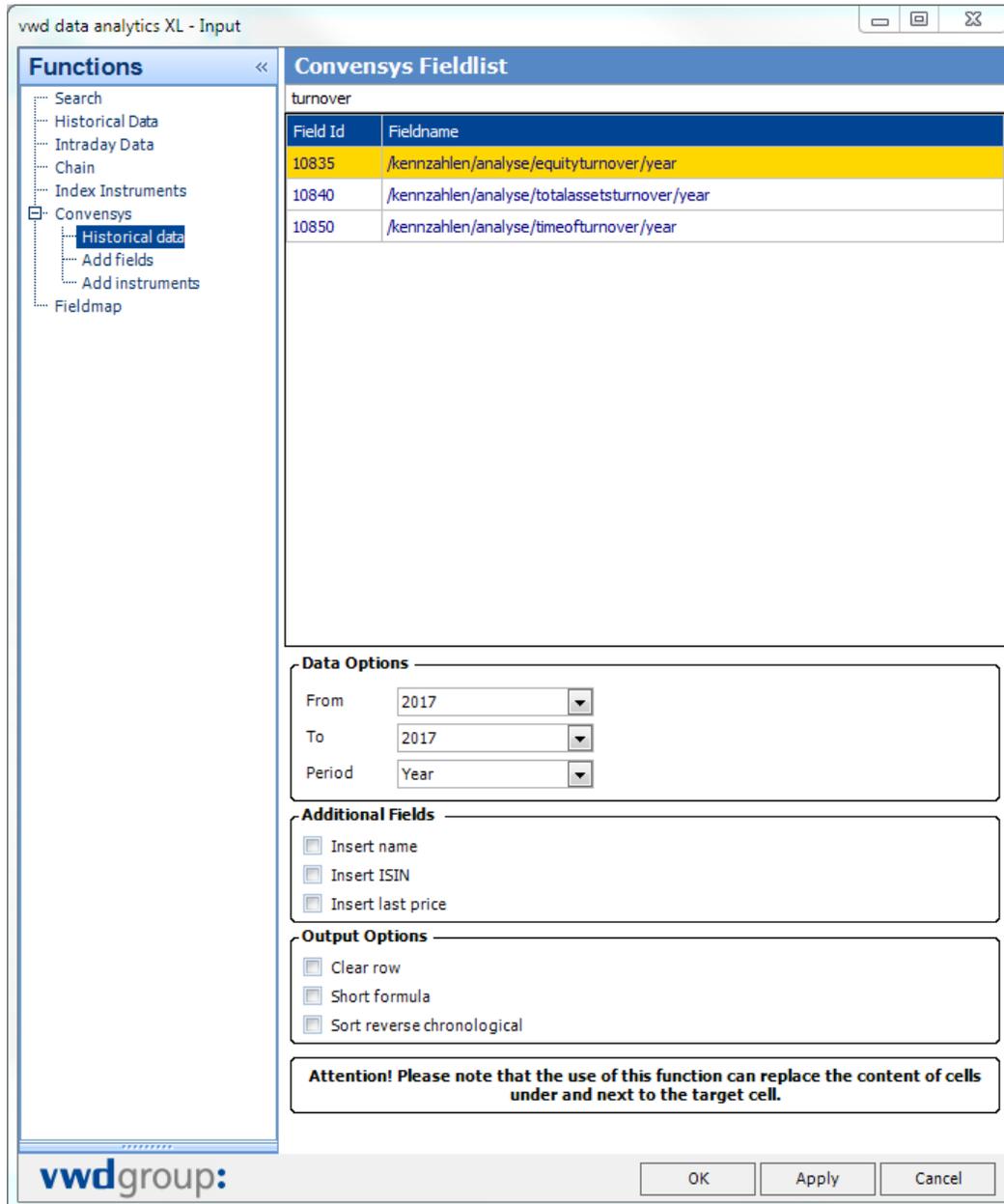
Fig. 49 Convensys-fieldlist filter

After you have completed your settings in the input form click the *Ok* button, and the Excel sheet will be filled with data as shown in the following image.
Please note that the sheet will be filled beginning with cell A1, so cells already filled with data might potentially be overwritten.
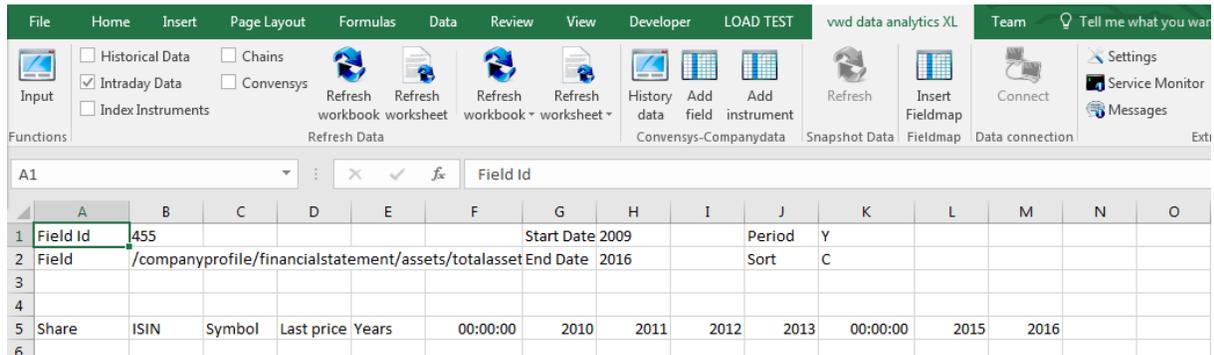
Fig. 50 Excelsheet filled with Convensys data

1.4.6.1. Adding instruments

Click on the button *Add instrument* to add one or more instruments to an Excel sheet. Insert the symbol of a security into the "Instrument" box and confirm with *Enter* to start your search. A click on the *Add* button will add the instrument to the "Chosen instruments" list.
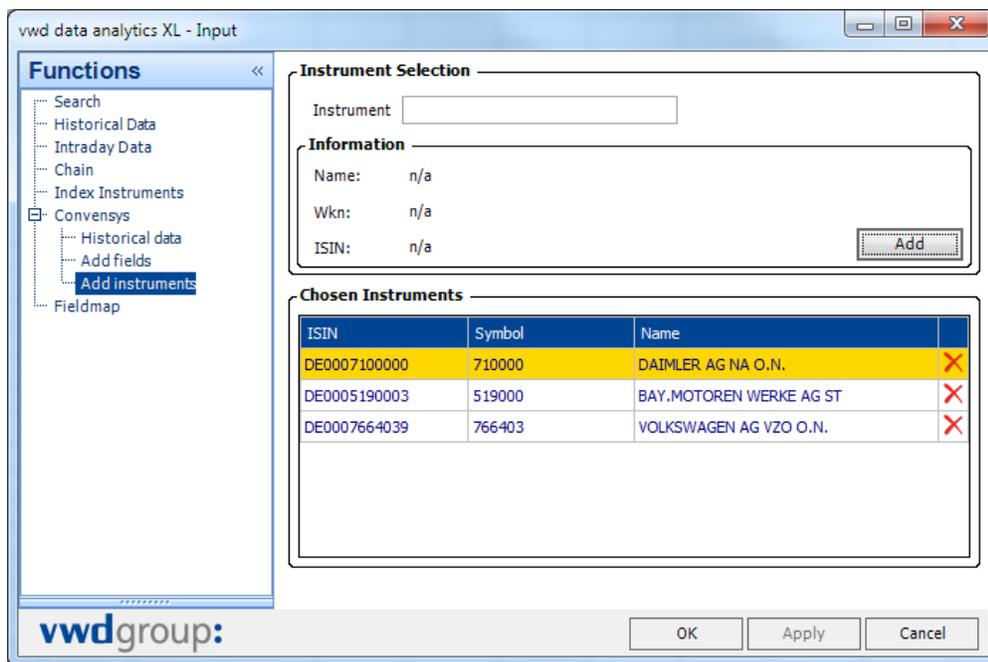
Fig. 51 Convensys – Add instruments

A click on the red *X* at the end of the row will remove an instrument from the list again.

After you have completed your selection a click on the *Ok* button will add the chosen instruments to your Excel sheet. Please note that all data will be added beginning with the first empty cell beneath the symbol column.

Attention:
Already filled cells will be overwritten.

Fig. 52 Excel-Sheet with retrieved Convensys data

1.4.6.2. Adding additional fields

In addition to the field you have selected to display historical data, it is possible to add more (ordinary) fields to your Excel sheet. If you click the *Add Field* button, a list will be displayed from which you can select one or more items. These additional fields will be added to your Excel sheet behind the historical data with a gap of one (blank) column. Please note that cells already filled with data might be overwritten.
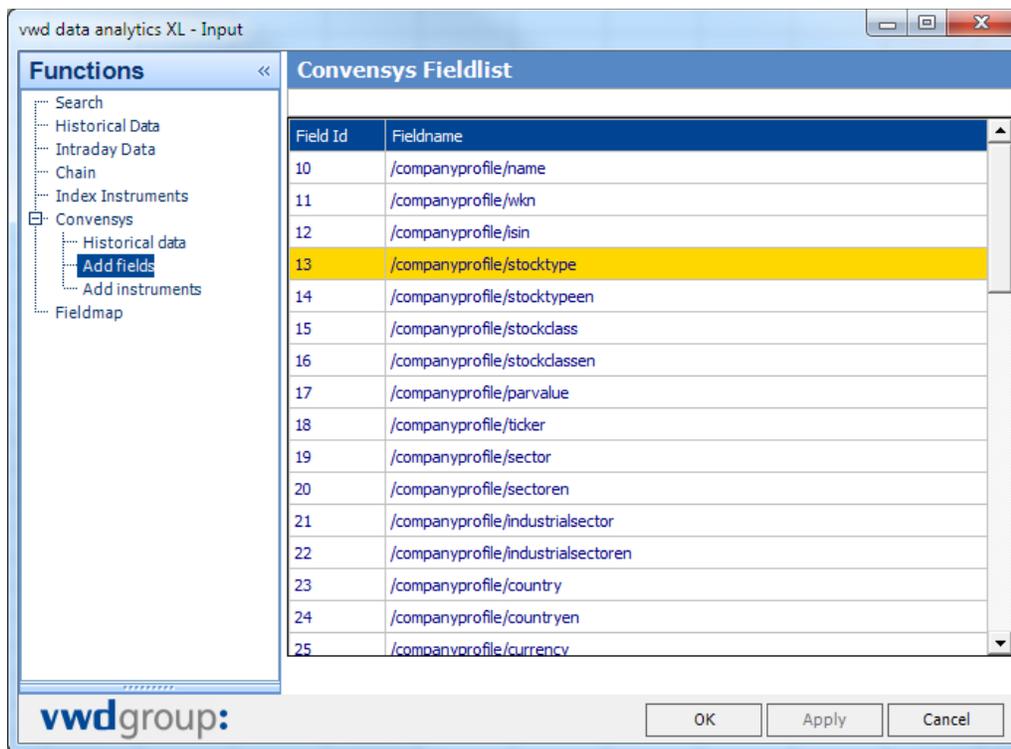
Fig. 53 Convensys – Add fields

After another field has been added the Exel sheet might look like the following image:

Fig. 54 Added Convensys field "stocktype"

1.4.6.3. Functions for Convensys

- **vwdConvField(fieldId)**
  This function determines the Convensys field for historical data to be retrieved. This function is created via input into the *Convensys-Companydata* input form.

- **vwdConvFeldname(fieldId)**
  This function retrieves the field name referring to the fieldId. The function is created if the input is effected via the *Convensys-Companydata* form

- **vwdConvSD(year)**
  This function determines the start date for Convensys data to be retrieved. The function is created via input into the *Convensys-Companydata* form.

- **vwdConvED(year)**
  This function determines the end date for Convensys data to be retrieved. The function is created via input into the *Convensys-Companydata* form.

- **vwdConvPeriod(period)**
  This function detemines the period for Convensys data to be retrieved (yearly, quarterly or short fiscal year (only when available))

- **vwdConvSort(sort)**
  This function determines the sort sequence for Convensys data (chronological or reverese chronological).

- **vwdSymbol()**
  This function sets the column for instruments to be inserted. It is mandatory for all kind of Convensys data requests.

1.4.6.4. Manual input for Convensys data.

Convensys data can also be retrieved without using the input form, if the following functions exist on the Excel sheet:

- vwdConvField(…)
- vwdConvSD(…)
- vwdConvED(…)
- vwdConvPeriod(…)
- vwdSymbol(…)

You can position these functions everywhere on the sheet. The vwdSymbol() function however should be placed beneath all other functions, otherwise an error message will be displayed.

Your Excel sheet might look like the following image:
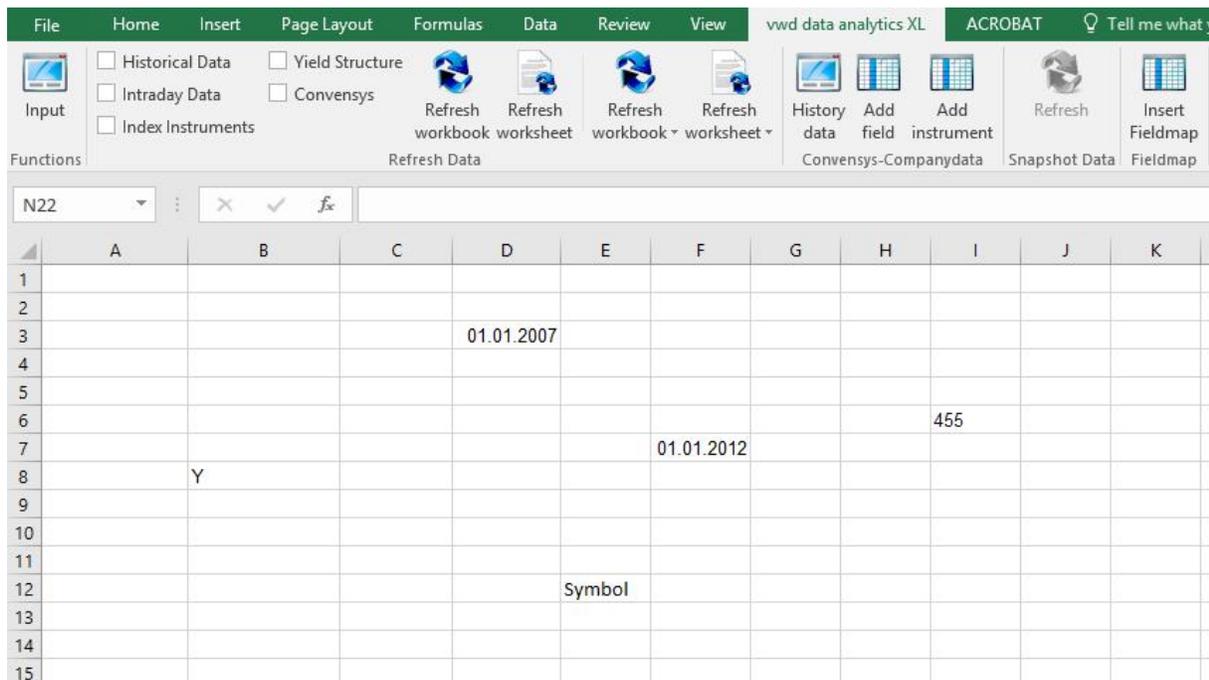
Fig. 55 Manually edited Convensys sheet

The previous image represents the following settings:

Cell B8:	=vwdConvPeriod("Y")
Cell D3:	=vwdConvSD("2007")
Cell E12:	=vwdSymbol()
Cell F7:	=vwdConvED("2014")
Cell I6:	=vwdConvField("455")

If you now add the instrument „710000.ETR" (with a click on *Add instrument*) the Excel sheet might look like this:
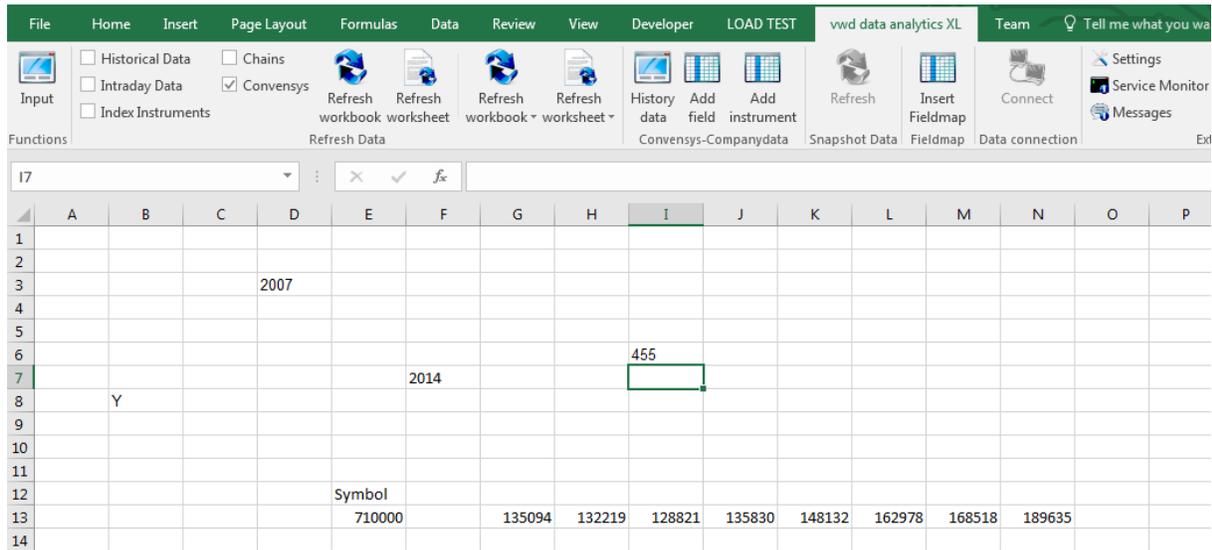
Fig. 56 Manually edited Convensys sheet with added instrument

To receive column headers and year dates click *Refresh* once.

Please note that labels ahead of entry fields like *Date from* will not be inserted. The Excel sheet might then look as follows:
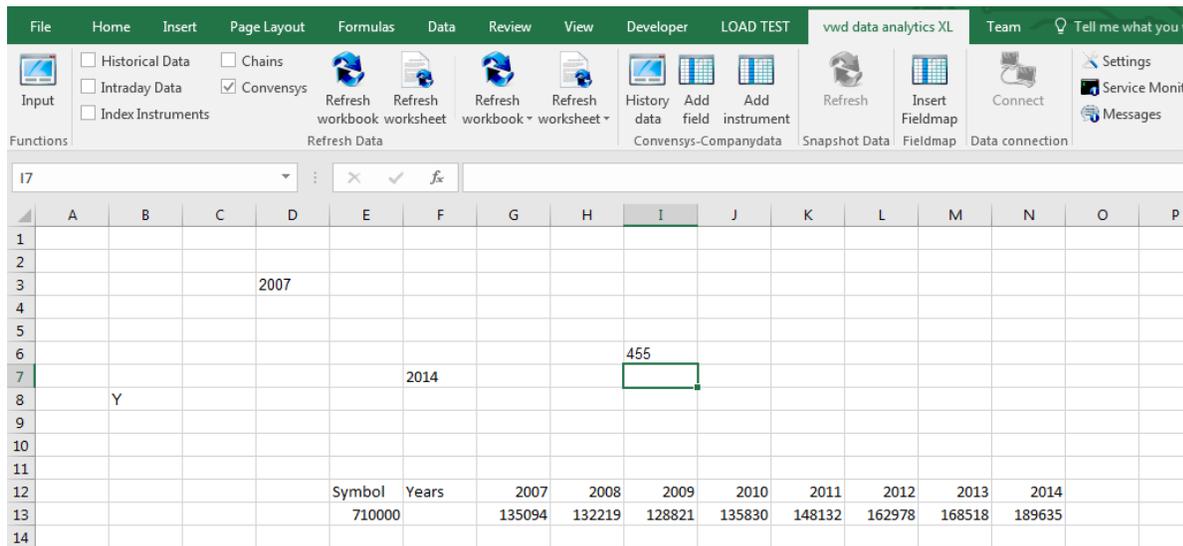
Fig. 57 Convensys sheet after refresh

Additional fields can be added with a click on the *Add Field* button.

Note:
- **If you close the "Historical Data" input form with a click on "Ok" the Excel sheet will be generated as described under "Retrieving Convensys company data". Already existing input formulas will not be deleted or modified; they have to be cleared in advance. In such cases an error message will appear.**
- **To amend input data simply change the respective parameter of the formula and click Refresh.**

Example:
Modification of the field go to the cell containing the input formula "=vwdConvField(…)" (here Cell I6) and adjust parameters, e.g. from ("455") to "(460)". If the historical data field is modified a click on Refresh is not necessary.

- **Shifting of formulas with input data is supported. The formula "=vwdConvPeriod("Y")" for example can be shifted from cell B8 to cell A6.**
- **Please keep in mind that the "=vwdSymbol(…)" formula must always be placed beneath other input formulas.**

1.4.6.5. More examples

a) It is not mandatory to add historical data to an Excel sheet. You can of course create Excel sheets consisting of "ordinary fields" (e.g. security type, country, currency etc.) only. This is a good way to set up info sheets with symbol basis data as seen in the following image:
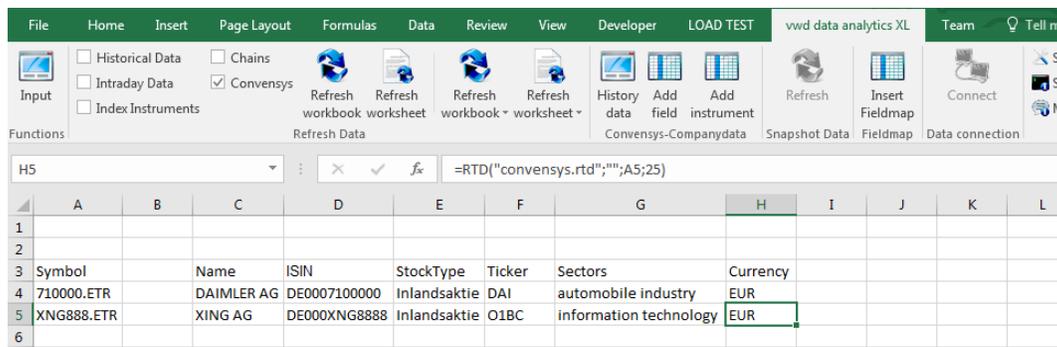
Fig. 58 Example sheet for Convensys data

The preceding image only displays a fraction of possible basis information referring to a symbol. Column A was marked as the symbol column with the formula "=vwdSymbol()". Next the fields "Name", "ISIN", "Stocktype", "Ticker", "Sectors" and "Currency" were added via the dropdown menu. Then the instruments "710000" and "XNG888" were added using the *Add Instrument* button. Further fields or symbols might be selected and added if need be.

Note:
Please keep in mind, that the vwdSymbol() function must not be placed in the first two rows. Otherwise an error message will be displayed.

b) Instruments must not necessarily be selected via the *Add Instrument* input form. To this end enter a WKN/ISIN/vwd symbol into the column containing the "=vwdSymbol()" function. Click *Refresh* to complete the procedure.

c) Instruments can be replaced by entering a different value into the column containing the „=vwdSymbol () function. The corresponding information will be refreshed automatically.

d) An „ordinary" field can be replaced by simply altering the fieldId inside the „vwdConv(…)" function. A click on *Refresh* will retrieve the corresponding data.

1.4.7. Fieldmap

The *fieldmap* is a collection of all vwd fields and represents a help in creating your own formulas. You can sort the list by either the field name or the field number. When filtering by security class (asset class) a quicker search is possible. You can also enter a search term to specifically search for a field or for fields. The list currently activated is then filtered by this keyword searching field name, field name, and Id.
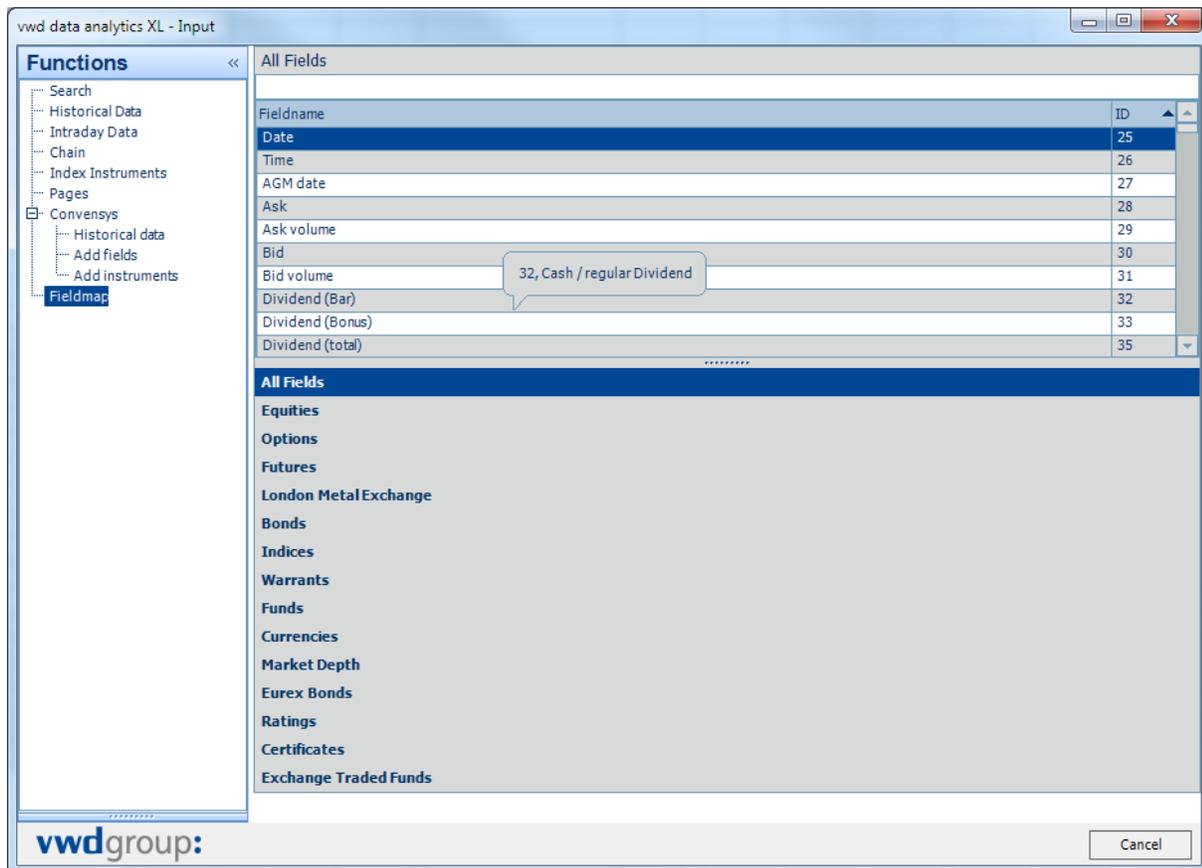
Fig. 59 Fieldmap *All Fields*

Fields selected in the fieldmap can be transferred to Excel by drag & drop.

Note:
Fields are transferred regardless of the availability of their contents.

1.4.8. Tips and tricks to create formulas.

1.4.8.1. Format of the Excel function

Given that a historical function was created via the input form:

Instrument: 710000.ETR
Date from: 01.09.2015
Date to: 28.09.2015
Aggregation: Day

Output fields: Date and Open (price)

The formula would read like this in Excel:

=vwdHistory2("710000.ETR";"01.09.2015";"28.09.2015";1;0;0;0;FALSE;FALSE;"A2";"DOBP";"";FALSE;FALSE;"CLEAR:{TRUE}LINEWISE:{FALSE}")

The example displays a formula with fixed start and end date. This is rarely useful, because you would have to adjust the formula every day if necessary. Instead of a date, a reference to a cell containing a date can be entered.

It is also possible to directly use Excel functions such as *Today()*, and complement them by calculations such as *Today()-10*.

Doing so you can easily create a general formula which always displays the last 10 days.

The input can be processed either directly in the formula or by clicking on the button *Add a function* in a standard Excel dialogue.
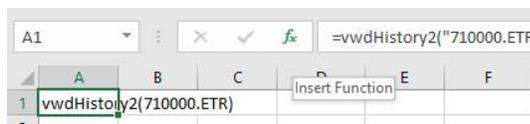
Fig. 60 Opening Excel formula dialogue
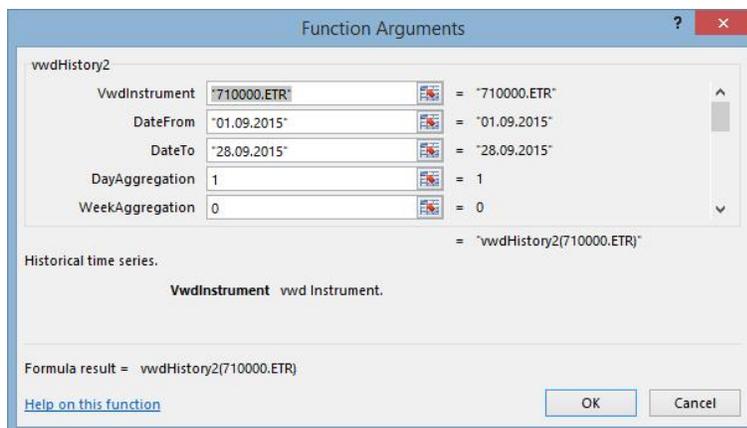
Fig. 61 Excel formula dialogue
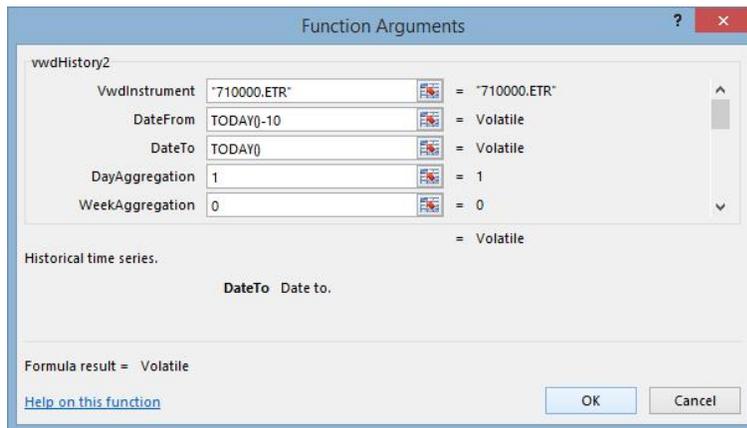
Fig. 62 Edited parameters *DateFrom* and *DateTo*

After closing the Excel Formula dialogue the formula would look like this in the Excel cell:

=vwdHistory2("710000.ETR";**TODAY()-
10;TODAY()**;1;0;0;0;FALSE;FALSE;"A2";"DOBP";"";FALSE;FALSE;"CLEAR:{TRUE}LINEWISE:{FALSE}")

1.4.8.2. Special notes/tips

For the output of a price on particular days (beginning of year, end...), the following understanding of the functionality is important:

The underlying data set is determined by the specified period.
If an opening price is desired (January 1 of the year) a price cannot be determined, since a 1st January of the year usually is not a trading day.
This would result in the following image for the query of a Federal bond (time series for non-existent prices filled up with #N/A):

	A	B	C	D	E	F
1	vwdHistory2(113522.FFM)					
2	BUNDANL.V. 03/34					
3	Date	Open	High	Low	Close	Volume
4	01.01.2010	#N/A	#N/A	#N/A	#N/A	#N/A
5	31.12.2010	#N/A	#N/A	#N/A	#N/A	#N/A
6	01.01.2011	#N/A	#N/A	#N/A	#N/A	#N/A
7	31.12.2011	#N/A	#N/A	#N/A	#N/A	#N/A
8	01.01.2012	#N/A	#N/A	#N/A	#N/A	#N/A
9	31.12.2012	#N/A	#N/A	#N/A	#N/A	#N/A
10	01.01.2013	#N/A	#N/A	#N/A	#N/A	#N/A
11	31.12.2013	#N/A	#N/A	#N/A	#N/A	#N/A
12	01.01.2014	#N/A	#N/A	#N/A	#N/A	#N/A
13	31.12.2014	#N/A	#N/A	#N/A	#N/A	#N/A
14	01.01.2015	#N/A	#N/A	#N/A	#N/A	#N/A
15	02.07.2015	1,517339	1,517339	1,517339	1,517339	45784
16	03.07.2015	1,517339	1,517339	1,517339	1,517339	45784

Fig. 63 Query filled up with NA

Formula:
=vwdHistory2("113522.FFM";"01.01.2010";"02.07.2015";1;0;0;0;FALSE;TRUE;"A2";"DVCLHOBY";"RID";FALSE;FALSE;"DAYS:{FDOYLDOY}FILL:{NA}CLEAR:{TRUE}")

Since the bond is neither traded on 31.12. nor on 01.01. price data cannot be delivered in this setting.
To determin prices for the beginning and end of the year, it is necessary to enable the output option "Fill up with last price".

The output will then read as follows:

	A	B	C	D	E	F
1	vwdHistory2(113522.FFM)					
2	BUNDANL.V. 03/34					
3	Date	Open	High	Low	Close	Volume
4	01.01.2010	4,16076	4,16076	4,16076	4,16076	0
5	31.12.2010	3,526023	3,526023	3,526023	3,526023	0
6	01.01.2011	3,526023	3,526023	3,526023	3,526023	0
7	31.12.2011	2,461799	2,461799	2,461799	2,461799	0
8	01.01.2012	2,461799	2,461799	2,461799	2,461799	0
9	31.12.2012	2,029982	2,029982	2,029982	2,029982	0
10	01.01.2013	2,029982	2,029982	2,029982	2,029982	0
11	31.12.2013	2,715064	2,715064	2,715064	2,715064	0
12	01.01.2014	2,715064	2,715064	2,715064	2,715064	0
13	31.12.2014	1,164127	1,164127	1,164127	1,164127	0
14	01.01.2015	1,164127	1,164127	1,164127	1,164127	0
15	02.07.2015	1,517339	1,517339	1,517339	1,517339	45784
16	03.07.2015	1,517339	1,517339	1,517339	1,517339	45784

Fig. 64 Query filled up with LR

Formula:
=vwdHistory2("113522.FFM";"01.01.2010";"02.07.2015";1;0;0;0;FALSE;TRUE;"A2";"DVCLHOBY";"RID";FALSE;FALSE;"DAYS:{FDOYLDOY}FILL:{LR}CLEAR:{TRUE}")

Since typically no trade occurs on both January 1 and December 31 the volumes of (trading free) days are set to "0", because here the last valid price of a trading day will be used.

For better understanding here the bond displayed on a daily basis and with the beginning of the year and year-end prices:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	vwdHistory2(113522.FFM)								vwdHistory2(113522.FFM)					
2	NDANL.V. 03/34								BUNDANL.V. 03/34					
3	Date	Open	High	Low	Close	Volume			Date	Open	High	Low	Close	Volume
4	23.12.2014	1,212654	1,212654	1,212654	1,212654	0			23.12.2014	1,212654	05:06:13	1,212654	05:06:13	0
5	24.12.2014								24.12.2014	1,212654	1	1,212654	05:06:13	0
6	25.12.2014								25.12.2014	1,212654	1	1,212654	05:06:13	0
7	26.12.2014								26.12.2014	1,212654	1	1,212654	05:06:13	0
8	27.12.2014								27.12.2014	1,212654	05:06:13	1,212654	05:06:13	0
9	28.12.2014								28.12.2014	1,212654	05:06:13	1,212654	05:06:13	0
10	29.12.2014	1,186584	1,186584	1,186584	1,186584	0			29.12.2014	1,186584	04:28:41	1,186584	04:28:41	0
11	30.12.2014	1,164127	1,164127	1,164127	1,164127	0			30.12.2014	1,164127	03:56:21	1,164127	03:56:21	0
12	31.12.2014								31.12.2014	1,164127	1,164127	1,164127	1,164127	0
13	01.01.2015								01.01.2015	1,164127	1,164127	1,164127	1,164127	0
14	02.01.2015	1,141492	1,141492	1,141492	1,141492	4000			02.01.2015	1,141492	03:23:45	1,141492	1,141492	4000
15	03.01.2015								03.01.2015	1,141492	03:23:45	1,141492	1,141492	0
16	04.01.2015								04.01.2015	1,141492	03:23:45	1,141492	1,141492	0
17	05.01.2015	1,089971	1,089971	1,089971	1,089971	00:00:00			05.01.2015	1,089971	02:09:33	1,089971	1,089971	4000
18	06.01.2015	1,011441	1,011441	1,011441	1,011441	00:00:00			06.01.2015	1,011441	00:16:29	1,011441	1,011441	0

Fig. 65 Compared results with different „Fill up" options

Prices on 2014-12-31 and 2015-01-01 correspond to the last traded price on 2014-12-30.

The formula for the result to the left reads like this:
=vwdHistory2("113522.FFM";"23.12.2014";"06.01.2015";1;0;0;0;FALSE;TRUE;"A2";"DOHLCVBY";"";FALSE;FALSE;"**FILL:{EMPTY}**CLEAR:{FALSE}LINEWISE:{FALSE}")

The formula for the result to the right reads like this:
=vwdHistory2("113522.FFM";"23.12.2014";"06.01.2015";1;0;0;0;FALSE;TRUE;"I2";"DOHLCVBY";"";FALSE;FALSE;"**FILL:{LR}**CLEAR:{FALSE}LINEWISE:{FALSE}")

1.5. Update data

The data provided via the "Historical Data", "Intraday Data", "Index Instruments" and "Yield curves" functions must be updated manually.

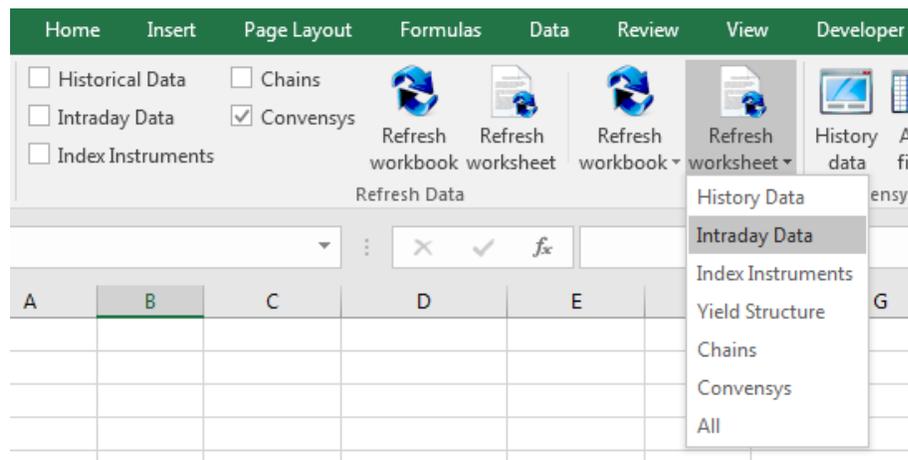This is done by the respective command in the "Refresh…" area.

Fig. 66 Update data

By selecting from the check boxes you can choose the data you want to retrieve. This way you define, for example, that clicking on "Update workbook" or "Refresh worksheet" will always update the functions of "Historical data" or "Intraday data".

The two last buttons allow a quick access to the update of a specific or all functions. "Refresh workbook" always updates functions on all sheets while "Refresh worksheet" only updates functions on the active sheet.

Please note that an update of multiple functions on the entire workbook may take a longer time.

1.6. Extras vwd data analytics XL

In the „Extras" section you can edit the settings of *vwd data analytics XL* and display the „Service Monitor" or "Messages".

1.6.1. Settings

To edit settings of your *vwd data analytics XL* click on the button *Settings* first.
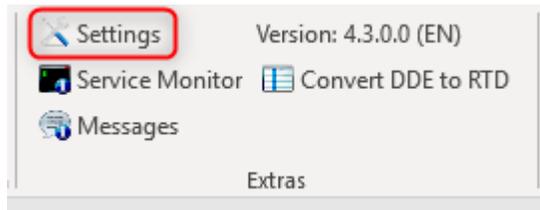
Fig. 67 Editing settings

You can edit the following settings in the appearing dialogue:
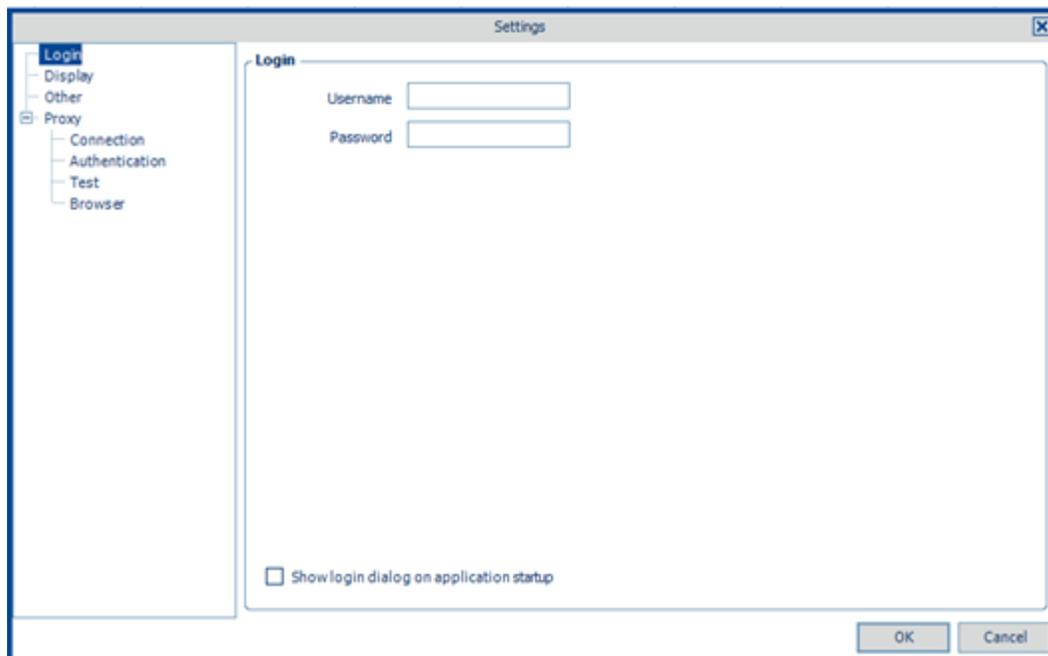
1.6.1.1. Login

Fig. 68 Editing login data

Here you can edit your user name and password for login.
If a data connection to the vwd backend is already active, amendments always require a restart of the program.
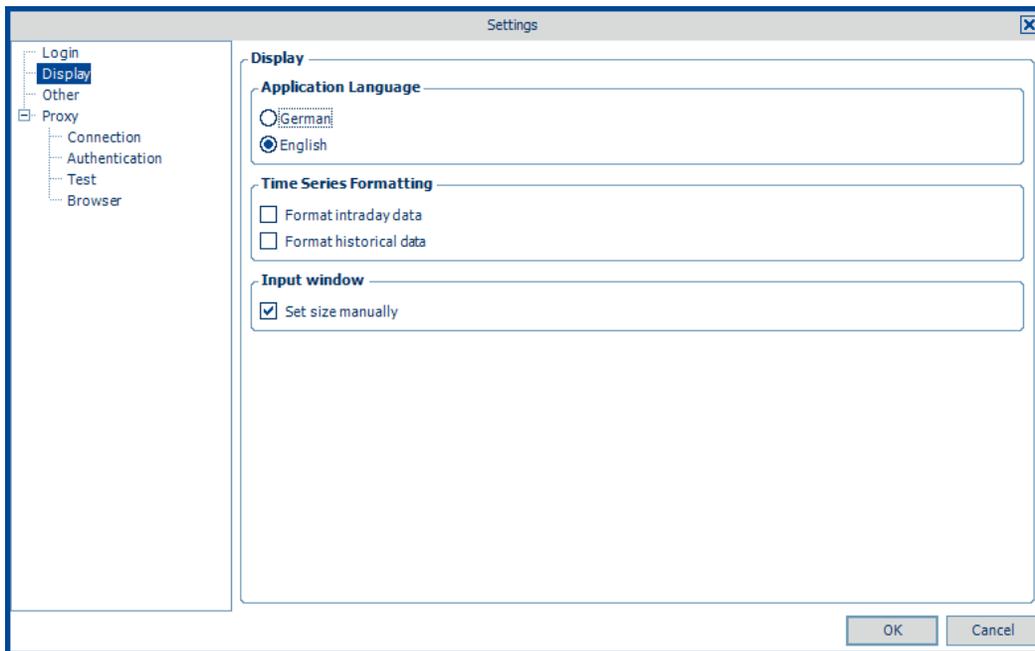
1.6.1.2. Display

Fig. 69 Editing display settings

To edit the display settings you have the following options:

a) **Application language**
You can set the language of *vwd data analytics XL* independent of the Windows system language. Please note that a change of language always requires a restart of Excel.

b) **Time series formatting**
By enabling the options *Format intraday data* and/or *Format historical data* the output will be formatted.
Headers will then be displayed in bold letters and separated from the data by lines.

Fig. 70 Intraday data without and with formatting

c) Input window

When disabling the option Set size manually the application will automatically adjust the size of the command window according to its content.
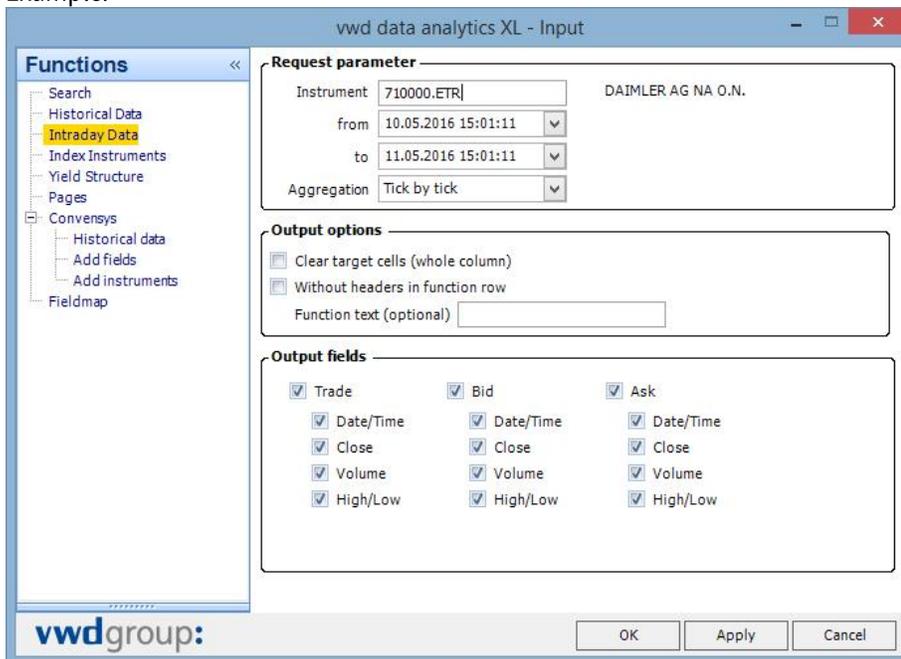
Example:

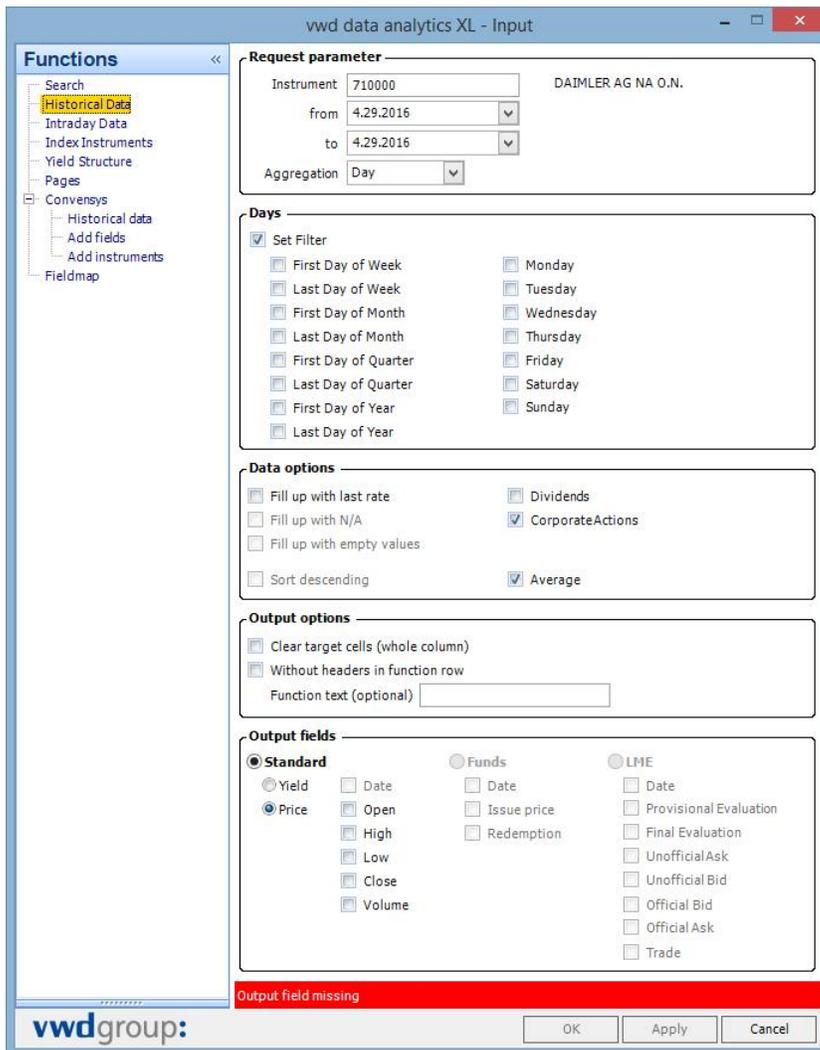Fig. 71 Automatic size adjustment

Fig. 72 Automatic size adjustment
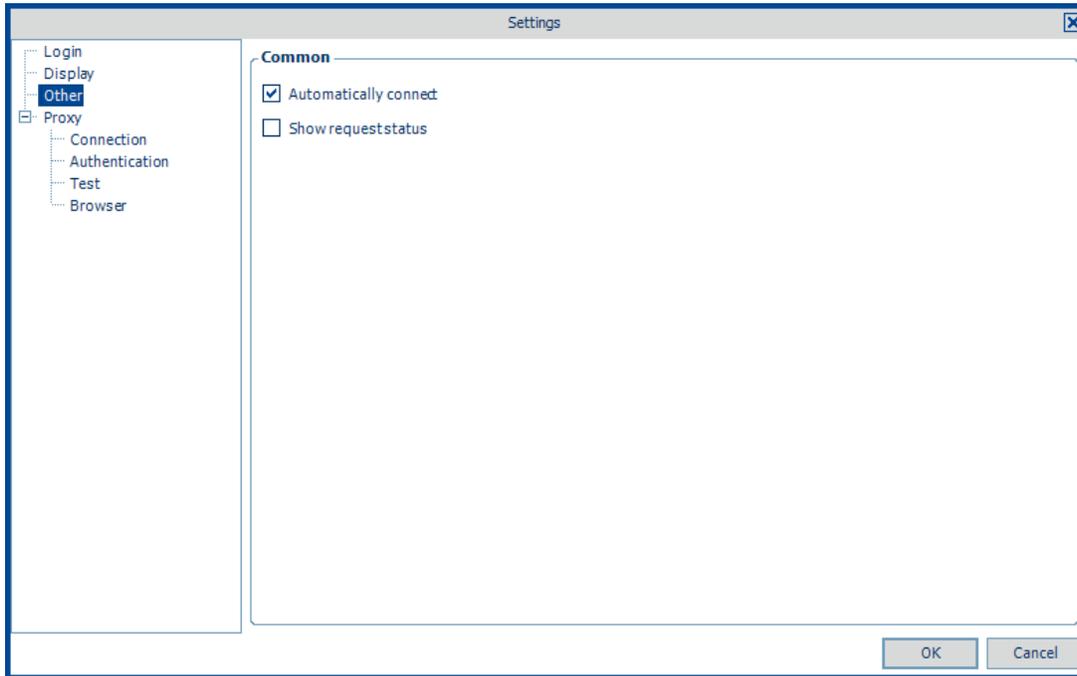
1.6.1.3. Other

Fig. 73 Editing other (miscellaneous) settings

When enabling the option *Automatically connect* your *vwd data analytics XL* will immediately connect to the vwd backend upon starting Excel.

If the option *Show request status* is enabled the current query status is displayed in the task pane to the right when updating functions. If you have minimised the task pane, it will appear automatically if the option is enabled and an update was launched.

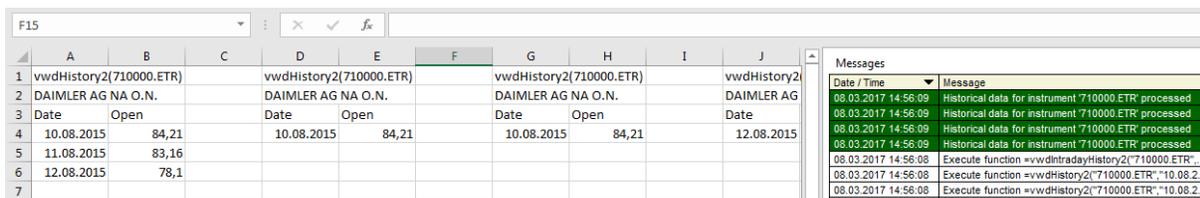Fig. 74 Request status in task pane

1.6.2. Service Monitor

The *vwd market server process viewer* is a dialogue for the detailed analysis of the data connection and may be helpful for the *vwd customer service* to analyse problems. Please do not change the settings without discussing it in advance with the *vwd customer service*, as this may compromise the operation of *vwd data analytics XL*.
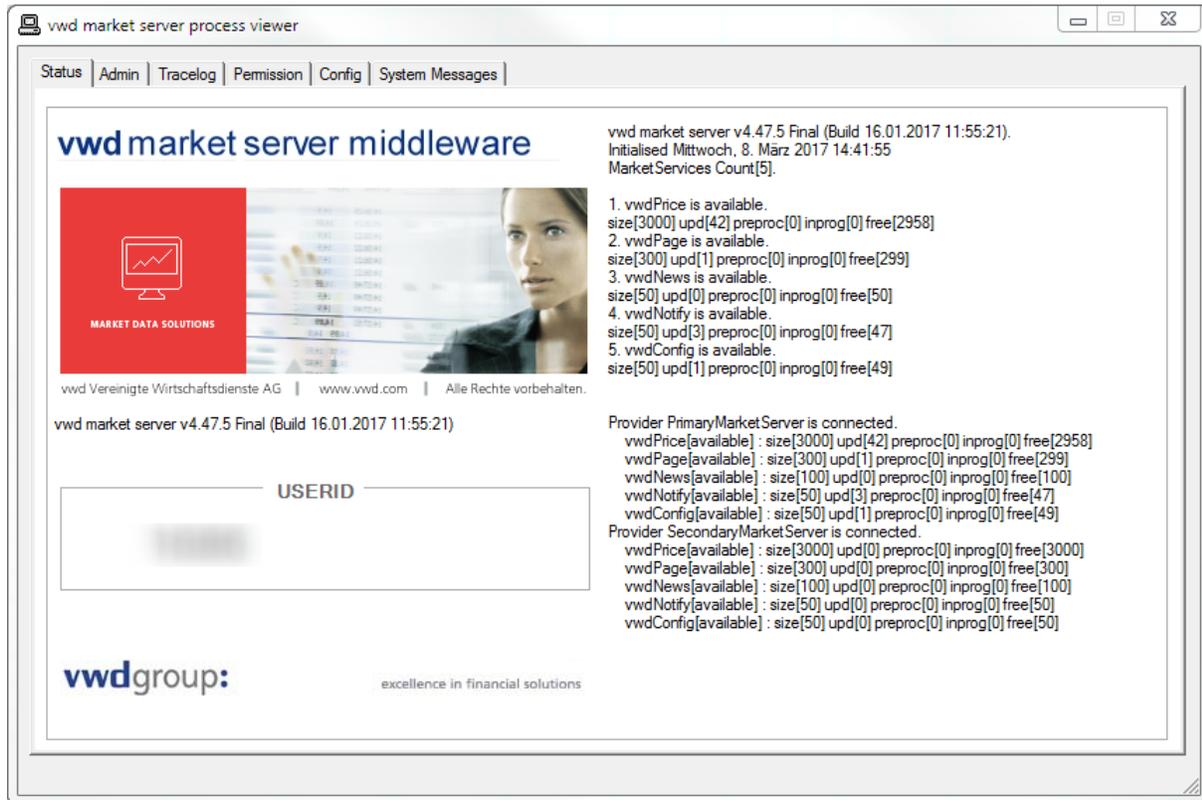
Fig. 75 Service monitor

1.6.3. Messages

Messages will be displayed in a task pane to the right of the Excel sheet. You can hide/unhide it or alter its size. The current size will be saved when closing Excel.
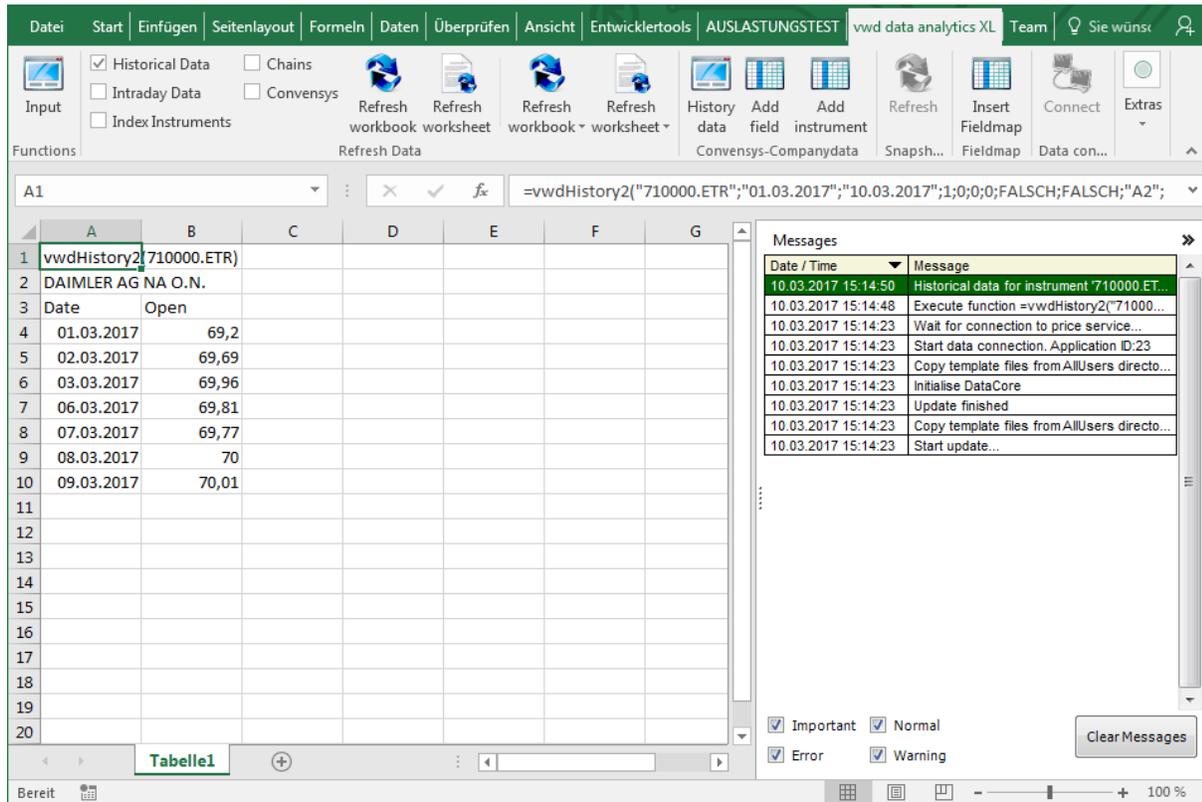
Fig. 76 Unhidden task pane displaying messages

Please keep in mind that the task pane will appear automatically if you have enabled the option *Show request status*.

You can clear the message box with a click on *Clear messages* at the bottom. You can also set a filter to different message types. If you for example set a filter to *Error* only messages of type error will be shown.

The size of the messages area can be adjusted by moving the separator between the messages area and Excel area.
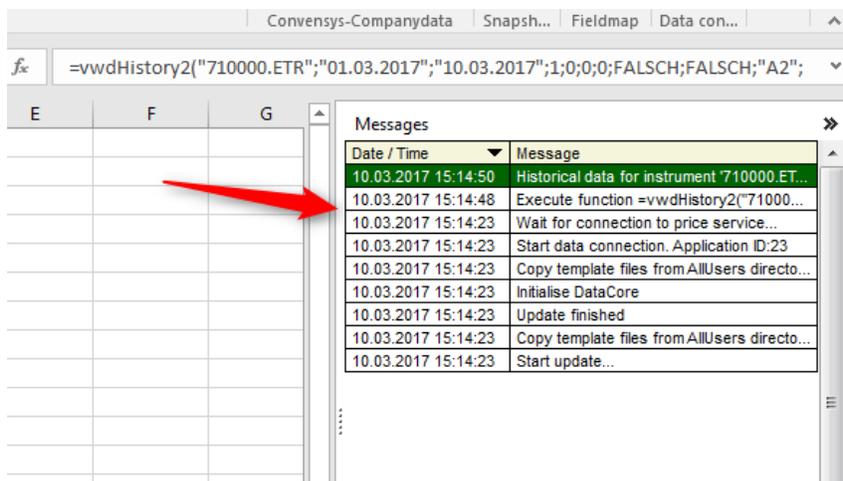
Fig. 77 Size adjustment of messages area

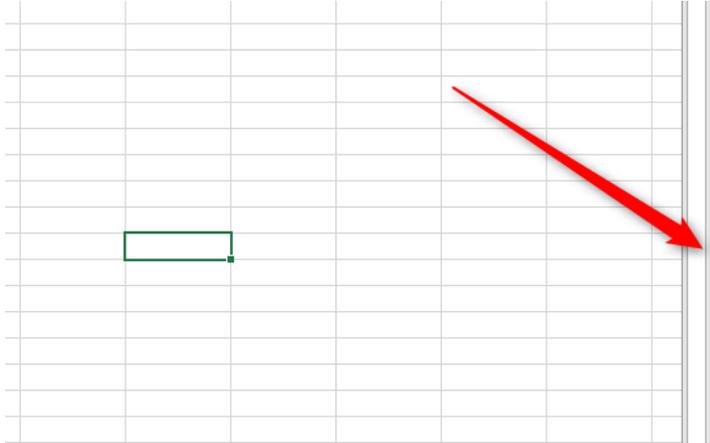You can hide the task pane with a double click on the separation line to the Excel sheet.

Fig. 78 Hidden task pane

If you move the mouse curser over one message, the complete message text is shown.
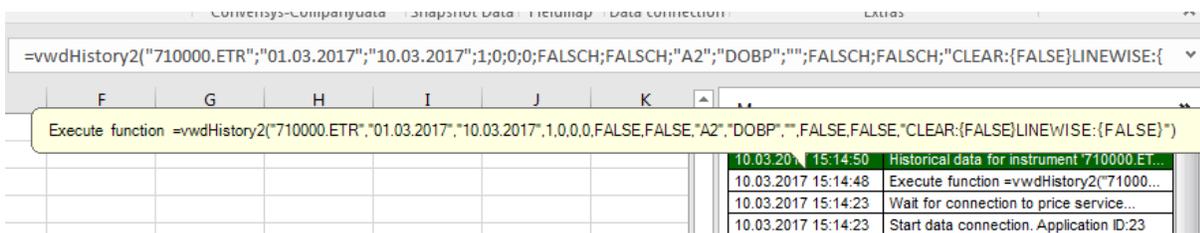
Fig. 79 Message text shown when moving the mouse cursor over an entry

1.6.4. Version

Fig. 80 Indication of the version and selected language

1.7. Snapshot data

vwd data analytics XL can process data in both Push and in Pull mode. How data are received depends on your permission. If you are only permissioned to receive Pull data, you will have to manually request an update for price data. In this case the push button *Snapshot Data* will be enabled.

Fig. 81 Refreshing snapshot data

1.8. Fieldmap

A click on the button *Insert Fieldmap* will add the entire vwd fieldmap to you Excel sheet.
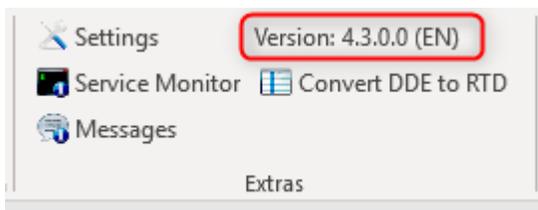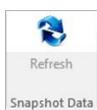In addition to the field name and the field number, the field format is shown. This is particularly important for users who want to further process the data.
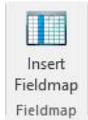

Fig. 82 Push button to insert the vwd fieldmap

	A	B	C	D
1	Fieldname	vwd field id	field data type	
2	Date	25	Date	
3	Time	26	Time	
4	AGM date	27	Date	
5	Ask	28	Double	
6	Ask volume	29	Int	
7	Bid	30	Double	
8	Bid volume	31	Int	
9	Dividend (Ba	32	Double	
10	Dividend (Bc	33	Double	
11	Dividend (to	35	Double	
12	PrevDay's to	36	Int	
13	Ask time	37	Time	
14	Ex-dividend	38	Date	
15	Type of divic	39	String	
16	Day's high as	40	Double	
17	Close	41	Double	
18	Gross yield	42	Double	
19	PrevDay's se	43	Double	
20	Conv Factor1	44	Date	
21	Last trading	45	Date	
22	Trading phas	46	String	
23	Country	47	String	
24	Currency	48	String	
25	Short securit	49	String	
26	Dividend cur	50	String	
27	Home excha	51	String	
28	Day's high as	52	Time	
29	Day's high	53	Double	
30	Legal market	54	String	
31	Coupon per	55	Date	
32	Interest rate	56	Double	
33	ISIN	57	String	
34	Long security	58	String	
35	Security nam	59	String	
36	Auction price	60	Double	
37	Quoting met	61	String	

Fig. 83 Clipping of an inserted vwd fieldmap

Please note that fields are inserted regardless of the availability of their contents.

1.9. Digital signature

First introduced with version 2.0.3.0 of *vwd data analytics XL* both the setup and the add-in have a certificate (digital signature). As a consequence, the add-in can also be used safely at higher security levels of the various Excel versions.

This section lists the security settings for the different Microsoft Excel versions.

If you work without major security requirements, you may skip this section.

1.9.1. Excel 2007/10/13/16 / Office 2007/10/13/16

Starting with Excel 2007/10 new security measures were introduced which permit separate security settings for macros and add-ins. You can access these settings through the Trust Center *(Excel Options -> Trust Center -> Trust Center Settings)*.

1.9.1.1. Add-in security

The setting that add-ins must be signed by a trustworthy publisher as well as all lower security levels are supported.
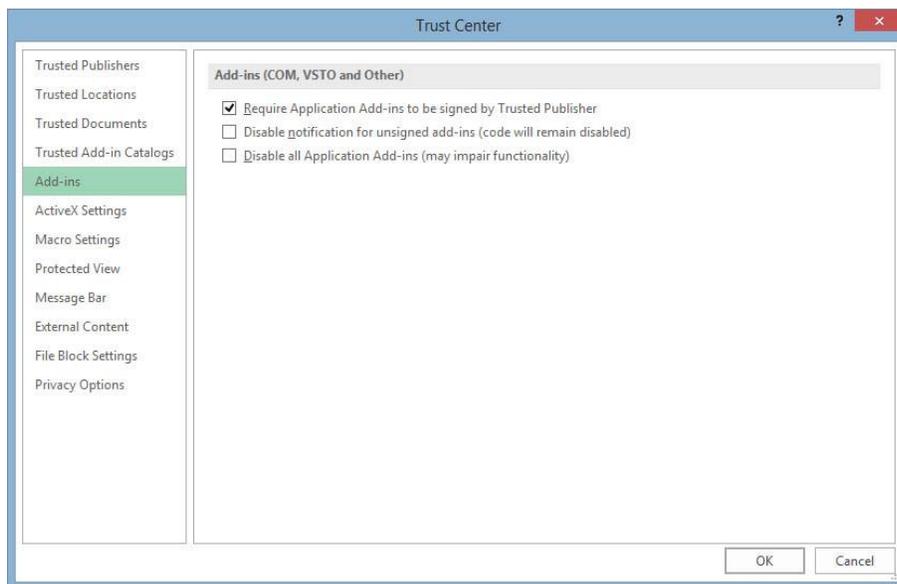

Fig. 84 Trust center - Add-ins (Excel 2016)

1.9.1.2. Macro security

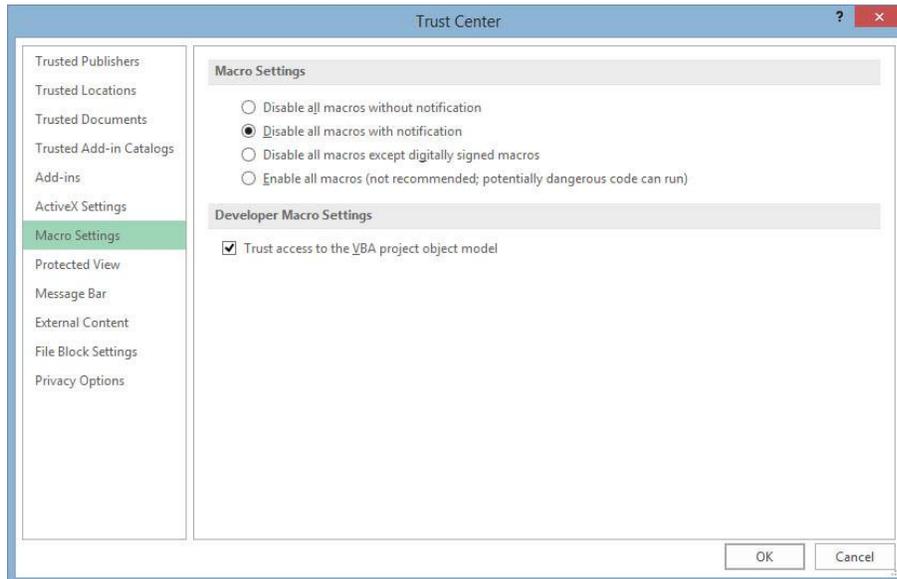The setting that macros must be digitally signed as well as all lower security levels are supported.

Fig. 85 Trust center – Macro settings (Excel 2016)

1.9.1.3. Activation after installation

After the installation a security warning appears on the Excel toolbar:
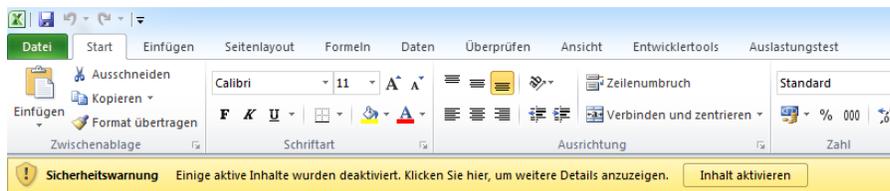

Fig. 86 Security warning (Excel 2010)

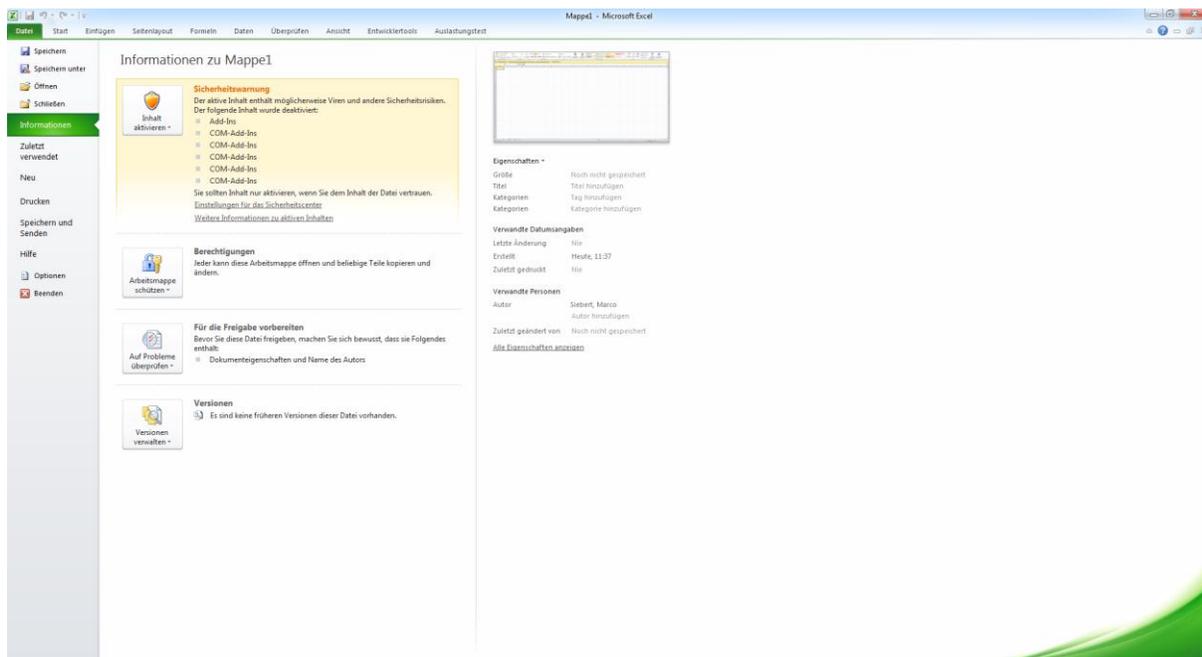If you press *Options* (Excel 2010) the following dialogue will appear:

Fig. 87 Information (Excel 2010)

Now click on Activate Content and then on Advanced Options (Excel 2010).

Fig. 88 Activate contents - erweiterte options (Excel 2010)

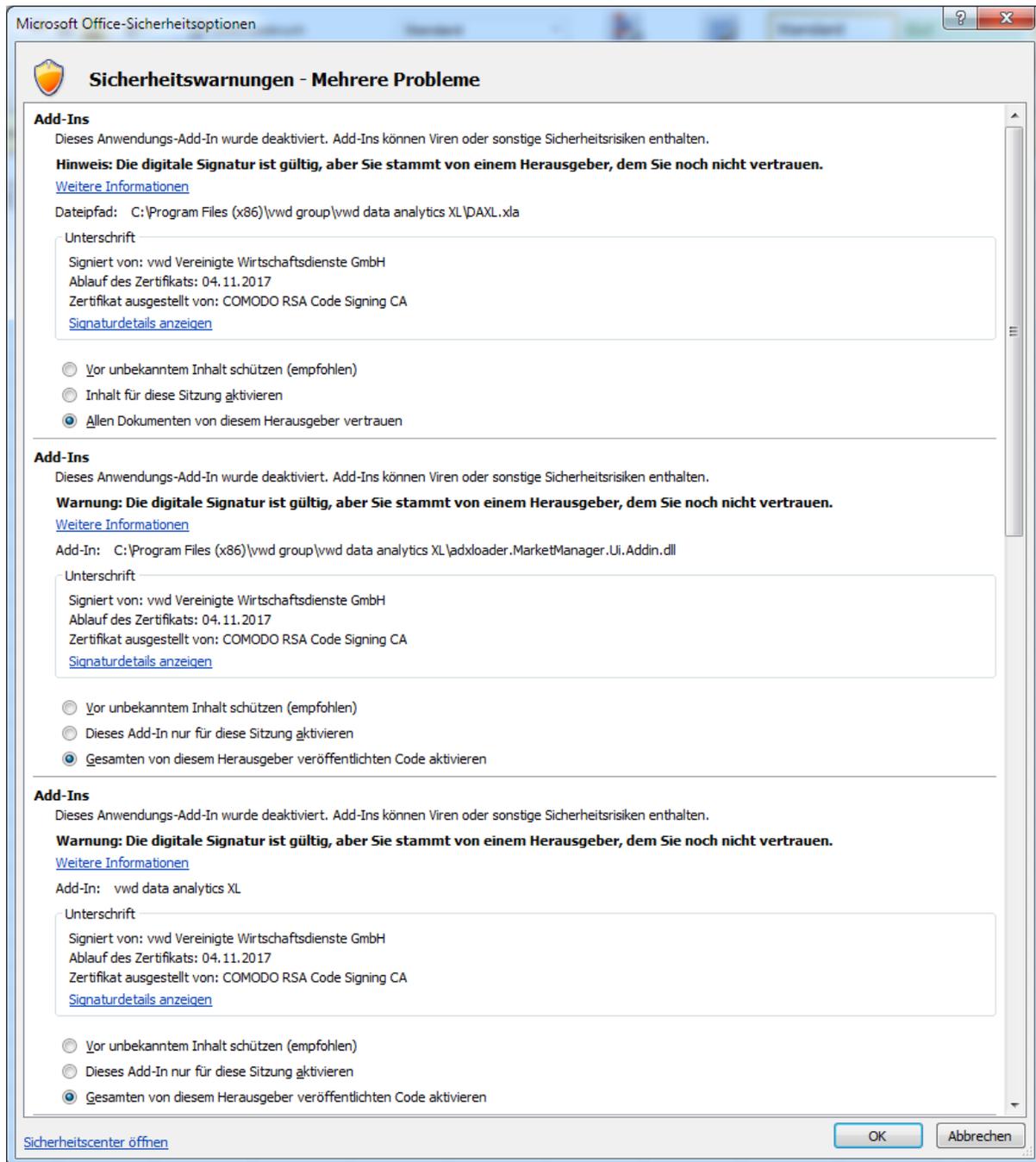Please select the bottom option in the following dialogue:

Fig. 89 Allow add-ins for vwd (Excel 2010)

This setting must be entered only once.

1.9.1.4. Special note

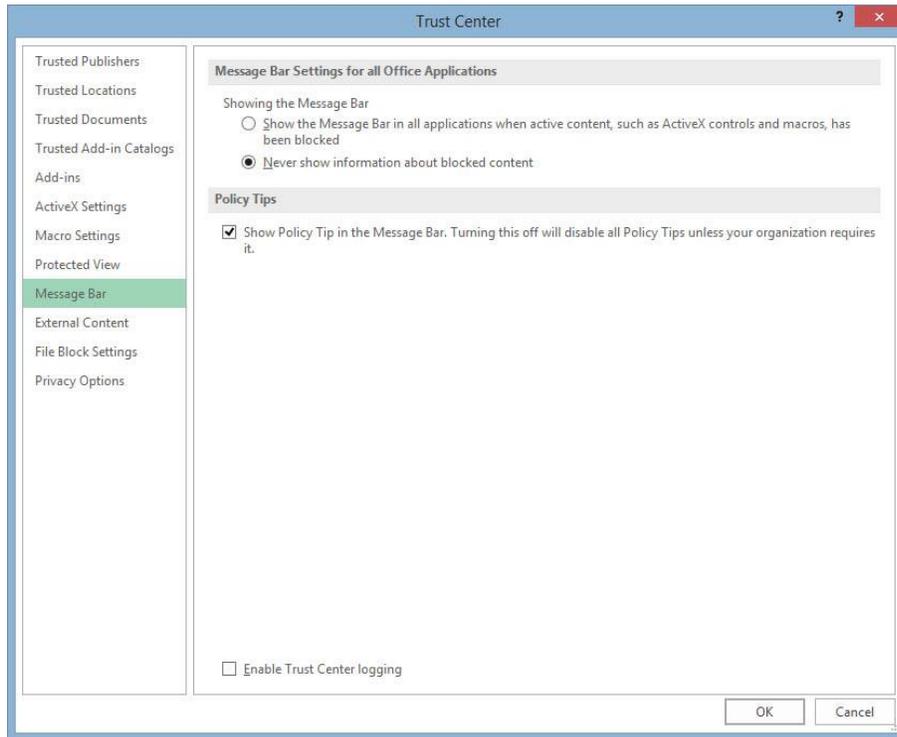It is possible to disable the security warnings in Excel 2010:

Fig. 90 Security center – Status bar disabled (Excel 2016)

This makes it impossible for the user to change the security settings for an add-in, macros, etc.
As a result, with higher security settings in Excel 2007/13 *vwd data analytics XL'*never appears without this being noticeable.

1.10. Troubleshooting

1.10.1. Toolbars do not appear

To conduct a check the following steps must be performed in the indicated order. If step 1 does not apply, continue with step 2.

1.10.1.1. Step 1: Check if the add-in has been disabled by Excel

Disabled items can be retrieved in Excel 2016 as follows:
In the main menu of Excel under *Options*. Select 'Disabled Items' in the bottom list and press *Go….*
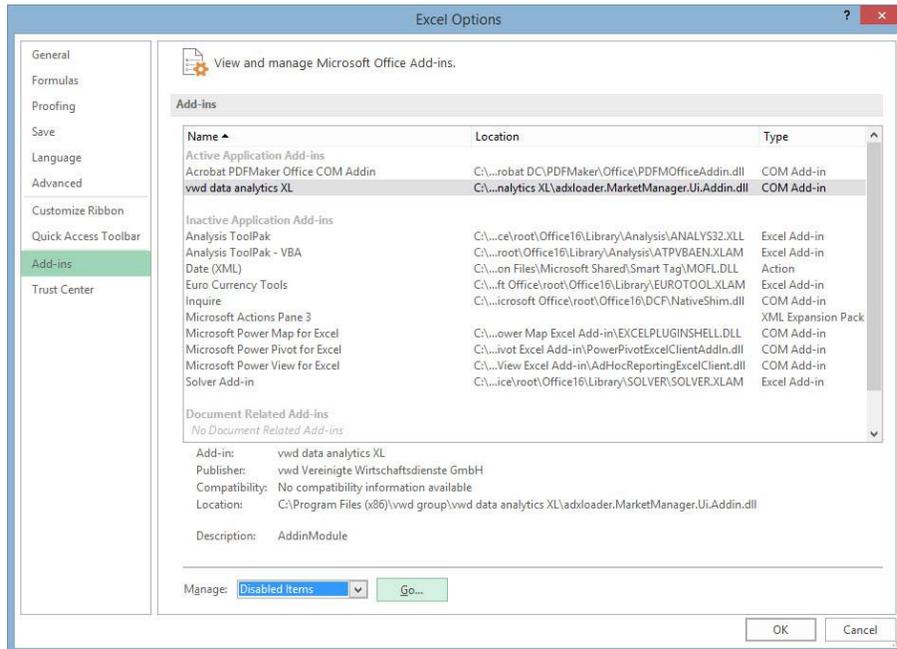
Fig. 91 Add-Ins in Excel 2016

The following dialogue will appear (no add-in is disabled in the screenshot):

Fig. 92 Disabled Items

If an add-in is listed in the window, you can enable it again by selecting it and then pressing *Activate*.

1.10.1.2. Step 2: Checking the registration database

The add-in is registered in the registration database using the following key:

32-bit operating system:
HKEY_LOCAL_MACHINE\Software\Microsoft\Office\Excel\Addins\MarketManager.ExcelAddin

64-bit operating system:
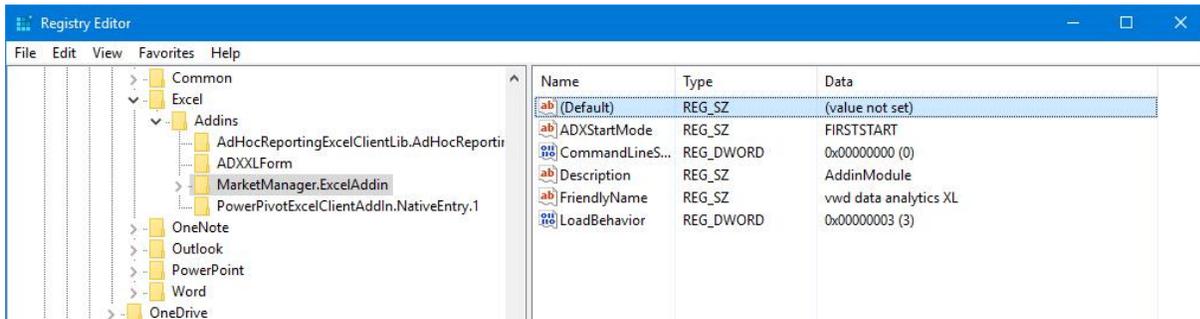*HKEY_CURRENT_USER\Software\Microsoft\Office\Excel\Addins\MarketManager.ExcelAddin*

Fig. 93 Registry Add-in

It is important that the value for *LoadBehaviour* is 3. If it is not 3, please contact the *vwd customer service*.

1.10.2. Historical and Intraday data not available

If '#NAME?' appears in the cell of the function when you enter a function of *vwd data analytics XL*, the UDFs (user-defined functions) have not been installed or are not registered.

Note:
You can still retrieve historical and intraday data. However, it is not certain that future UDFs are going to work as well.
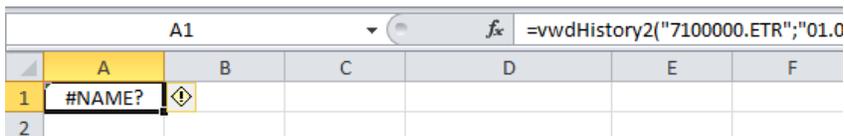

Fig. 94 UDF- functions not registered

Please take the following steps in precisely that order.

1.10.2.1. Step 1: Installing UDF

Close Excel and perform the program *Install UDF* in the program group *vwd group -> vwd data analytics XL*.
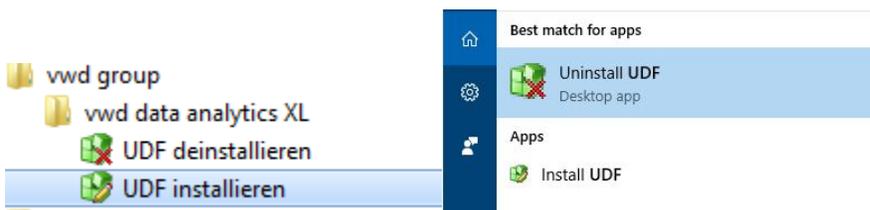

Fig. 95 Installing UDF

Now restart Excel and click on the function icon (fx) in the toolbar.

Fig. 96 Excel functions toolbar

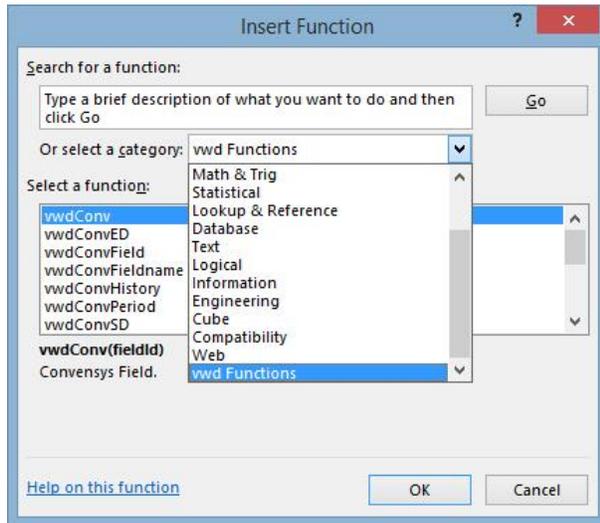*vwd functions* will now appear in the list of categories

Fig. 97 Excel functions window

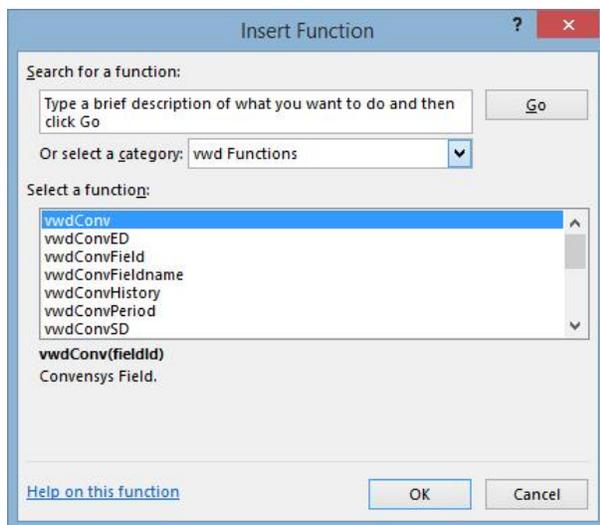and the following functions should be listed in this category:

Fig. 98 Clipping vwd functions

1.10.2.2. Step 2: Checking the registration database

The UDFs are registered in the registration database with the following key:

32-bit/64-bit operating system:
HKEY_CURRENT_USER\Software\Microsoft\Office\'Office VersionNumber' Excel\Options\Open

Fig. 99 Registry *vwd data analytics XL*

Please note the version numbers for Office/Excel are as follows:

- Excel 2007 – 12.0
- Excel 2010 – 14.0
- Excel 2013 – 15.0
- Excel 2016 – 16.0

An *OPEN* entry with the following pattern must exist:

/R \ ''vwd data analytics XL InstallationsPath'\\adxloader.MarketManager.Ui.Addin.dll\'

Example:

/R \ 'C:\\Program Files (x86)\\vwd group\\vwd data analytics XL\\adxloader.MarketManager.Ui.Addin.dll\'

If this entry does not exist, please contact the vwd customer service.

1.10.3. RTD function displays '#N/A'

The value '#N/A' appears in the cells with RTD formulas.

Fig. 100 RTD-Formel zeigen lediglich #NV

In this event the registration of the RTD function of *vwd data analytics XL* has failed. Please contact the *vwd customer service*.

1.10.4. DDE function displays '#REF!"

The value '#REF!' appears in the cells with DDE formulas.

Fig. 101 DDE-Formeln mit Wert #BEZUG!

In this event the data were linked via DDE, but *vwd market manager* is not running.

To check this, click on a cell with '#REF!' and look in the Excel toolbar to find out if it contains a DDE syntax:

Fig. 102 DDE formula in an Excel sheet

DDE formulas are not support if you are using the *vwd data analytics XL Standalone* (without *vwd market manager*.

1.10.5. RTD function displays „no data"

There is no connection to the vwd backend. To check this, select the menu item *Service Monitor* in the *vwd data analytics XL*.
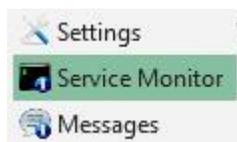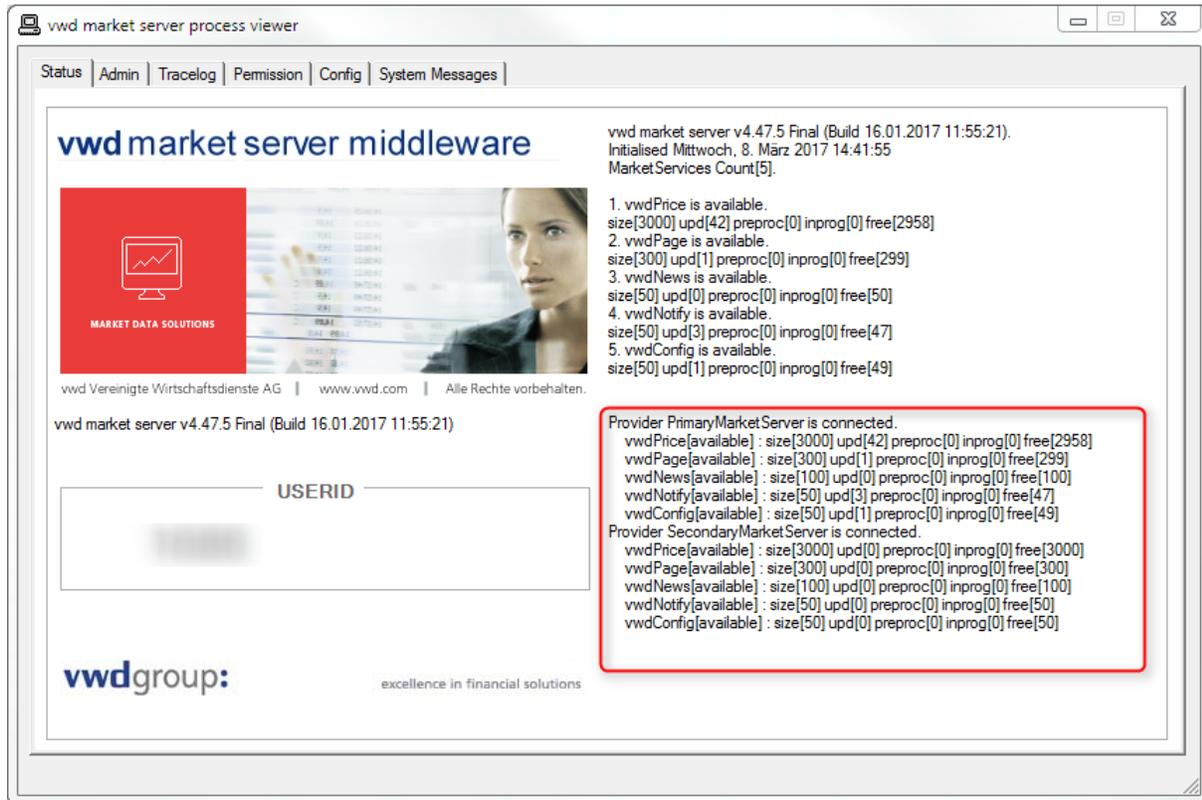

Fig. 103 Call Service Monitor

Fig. 104 Service Monitor

If *unavailable* appears on the right-hand side (the screenshot shows *available*), no connection to the vwd backend could be established. Check your Internet connection. If the problem persists, please contact the vwd customer service.

1.10.6. RTD data are updated once every 2 seconds

By default Excel has the notion of a throttle for RTD. By default this throttle is set at 2,000 milliseconds (two seconds).
See also: http://msdn.microsoft.com/en-us/library/office/aa140060%28v=office.10%29.aspx#odc_xlrtdfaq_whyupdateoncetwo.

This can be disabled using the VBA window with the command "Application.RTD.ThrottleInterval = 0". The state of the throttle interval can be checked with the command "?Application.RTD.ThrottleInterval".

2. Contact

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