

Downloading data from the Swiss National Bank, and getting them into a neat format

This document shows you how to download data on exchange rates and exports/imports. It also shows you what to do if the data look messy when you open them in Excel (or read them into R).

We will use these data to explore how Swiss imports and exports react to the CHF exchange rate, and what's the effect of events like January 15, 2015...

Go the website of the Swiss National Bank and go to “Statistiken” on the left sidebar.

The screenshot shows the Swiss National Bank website in German. The main header includes the bank's name in multiple languages and navigation links. The left sidebar contains a menu with 'INFORMATIONEN ÜBER' and 'INFORMATIONEN FÜR'. The main content area features a headline about the SNB's role as an independent central bank, followed by a section titled 'NEUES AUF DER WEBSITE' with recent news items. On the right, there are sections for 'AKTUELLE DEVISENKURSE' (Current Exchange Rates) and 'AKTUELLE ZINSSÄTZE' (Current Interest Rates).

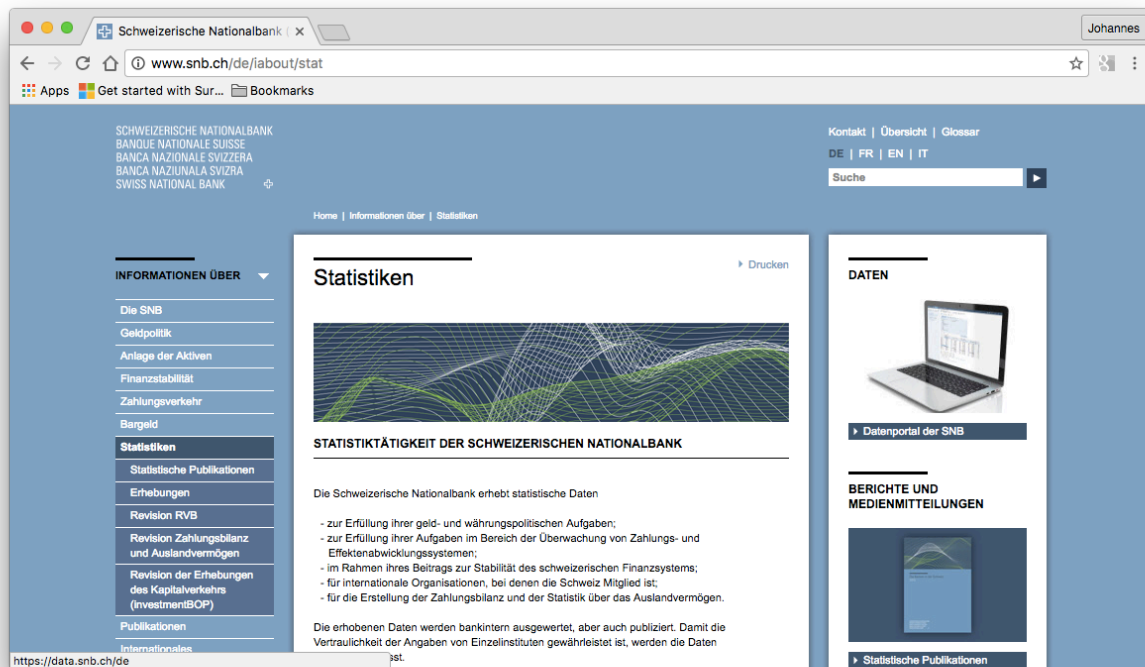
AKTUELLE DEVISENKURSE
07.10.2016

Währung	Kurs
EUR / CHF	1.0924
USD / CHF	0.9815
JPY / CHF	0.9453
GBP / CHF	1.2200

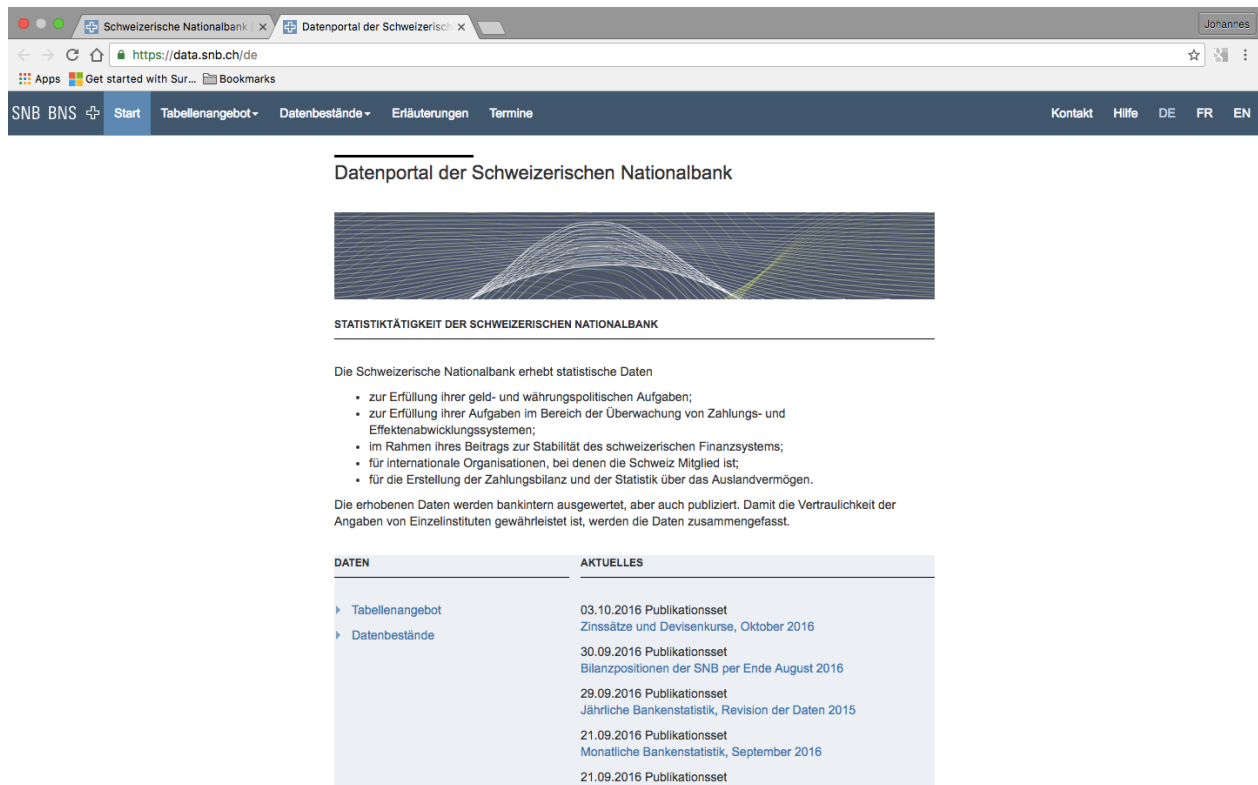
AKTUELLE ZINSSÄTZE

3-Monats-Libor: -0.73
SNB-Zielband: -1.25 - -0.25

Go to “Datenportal der SNB” on the right side.



Go to “Zinssätze und Devisenkurse”.



Go to “Devisenkurse”

The screenshot shows a web browser window with two tabs: 'Schweizerische Nationalbank' and 'Publikationsset'. The address bar displays the URL <https://data.snb.ch/de/publishingSet/A>. The browser interface includes a search bar, a 'Get started with Sur...' button, and a 'Bookmarks' section. The website's navigation bar features links for 'SNB', 'BNS', 'Start', 'Tabellenangebot', 'Datenbestände', 'Erläuterungen', and 'Termine'. On the right side of the navigation bar, there are links for 'Kontakt', 'Hilfe', and language options 'DE', 'FR', and 'EN'. The main content area is titled 'Publikationsset Zinssätze und Devisenkurse'. Below the title, it states 'Das Publikationsset enthält die folgenden Tabellen' and 'Letzte Publikation: 2016-10-03 14:30'. A section header 'ZINSSÄTZE, RENDITEN UND DEISENMARKT' is followed by a list of links: 'Geldmarktsätze', 'Renditen von Obligationen – Monat', and 'Devisenkurse'. At the bottom of the page, a footer contains the text 'Rechtliches | © Schweizerische Nationalbank, Zürich (Schweiz)'.

Schweizerische Nationalbank x Publikationsset x Johannes

<https://data.snb.ch/de/publishingSet/A>

Apps Get started with Sur... Bookmarks

SNB BNS Start Tabellenangebot Datenbestände Erläuterungen Termine Kontakt Hilfe DE FR EN

Publikationsset Zinssätze und Devisenkurse

Das Publikationsset enthält die folgenden Tabellen

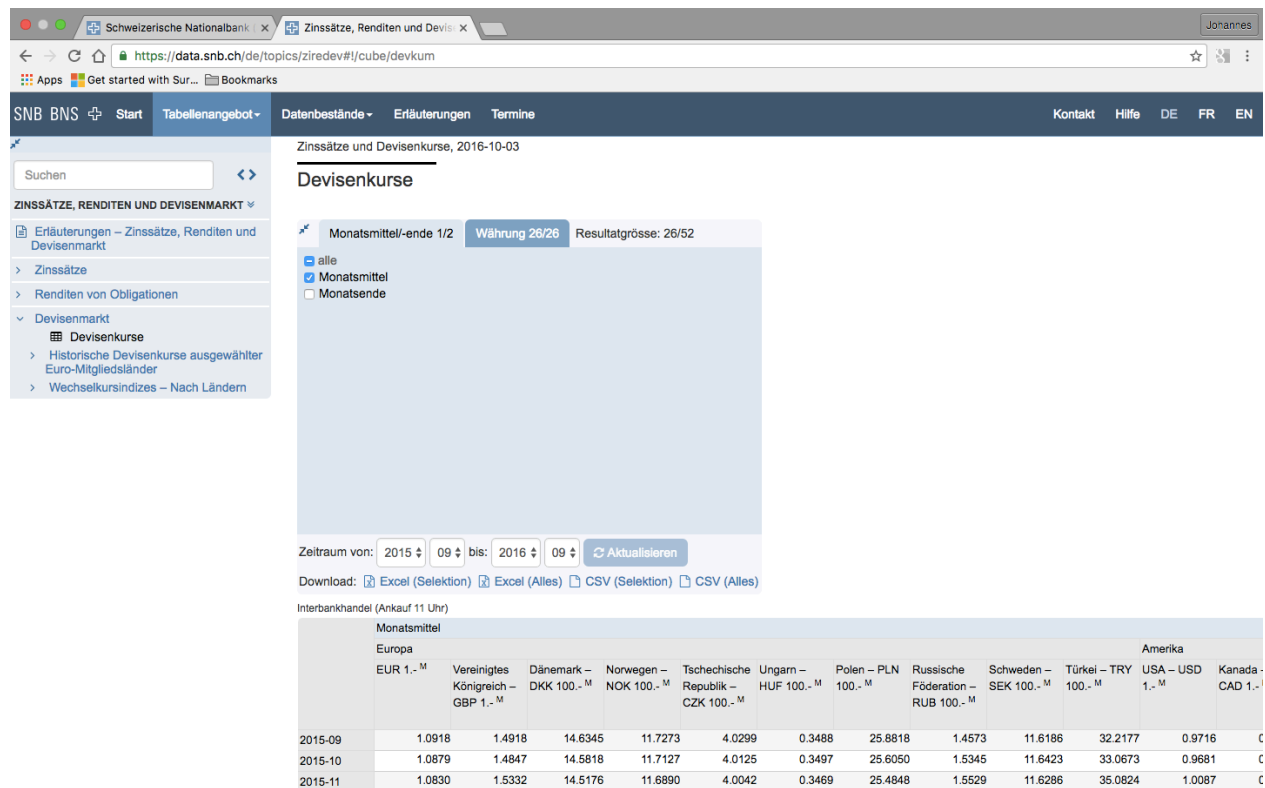
Letzte Publikation: 2016-10-03 14:30

ZINSSÄTZE, RENDITEN UND DEISENMARKT

- › Geldmarktsätze
- › Renditen von Obligationen – Monat
- › Devisenkurse

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So you get this. Click on “CSV (Alles)” to download all data.



Devisenkurse

Monatsmittel-ende 1/2 Währung 26/26 Resultatgröße: 26/52

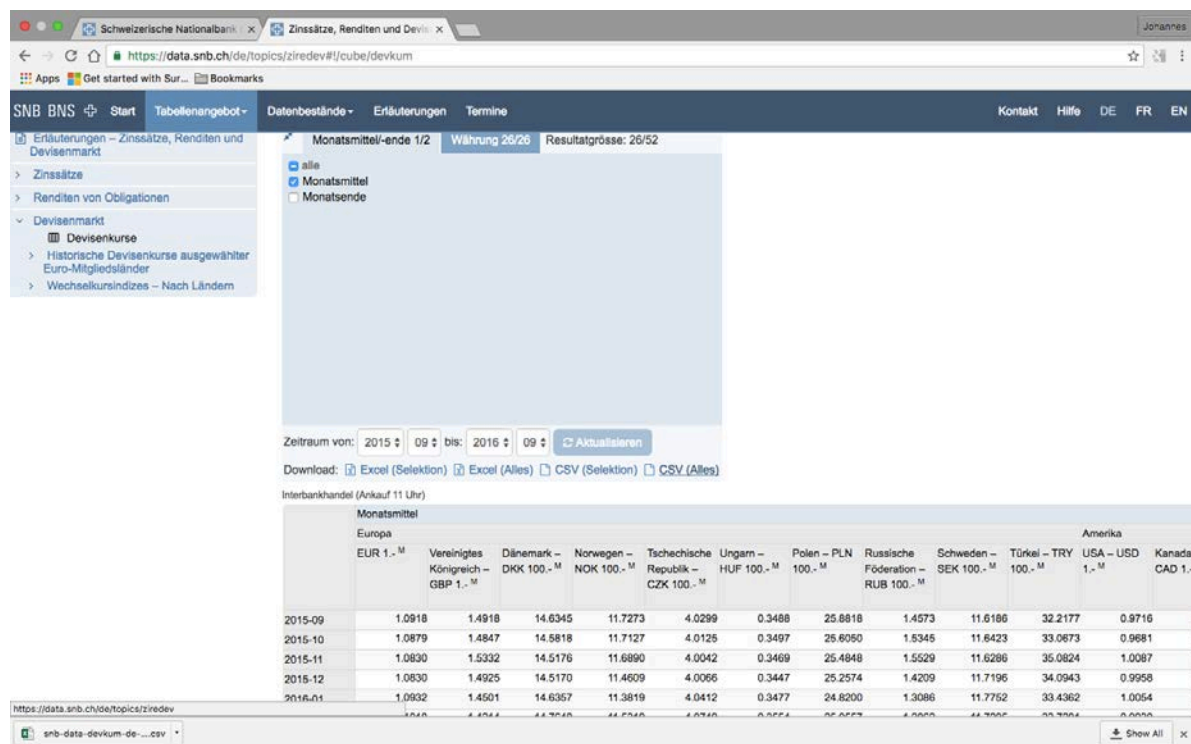
Zeitraum von: 2015 09 bis: 2016 09 Aktualisieren

Download: Excel (Selektion) Excel (Alles) CSV (Selektion) CSV (Alles)

Interbankhandel (Ankauf 11 Uhr)

	Europa										Amerika	
	EUR 1.- ^M	Vereinigtes Königreich – GBP 1.- ^M	Dänemark – DKK 100.- ^M	Norwegen – NOK 100.- ^M	Tschechische Republik – CZK 100.- ^M	Ungarn – HUF 100.- ^M	Polen – PLN 100.- ^M	Russische Föderation – RUB 100.- ^M	Schweden – SEK 100.- ^M	Türkel – TRY 100.- ^M	USA – USD 1.- ^M	Kanada – CAD 1.- ^M
2015-09	1.0918	1.4918	14.6345	11.7273	4.0299	0.3488	25.8818	1.4573	11.6186	32.2177	0.9716	
2015-10	1.0879	1.4847	14.5818	11.7127	4.0125	0.3497	25.6050	1.5345	11.6423	33.0673	0.9681	
2015-11	1.0830	1.5332	14.5176	11.6890	4.0042	0.3469	25.4848	1.5529	11.6286	35.0824	1.0087	

The data get downloaded into the download folder in csv format, as you can see on the lower left corner of the browser below.



Devisenkurse

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2015-09	1.0918	1.4918	14.6345	11.7273	4.0299	0.3488	25.8818	1.4573	11.6186	32.2177	0.9716	
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2015-11	1.0830	1.5332	14.5176	11.6890	4.0042	0.3469	25.4848	1.5529	11.6286	35.0824	1.0087	
2015-12	1.0830	1.4925	14.5170	11.4609	4.0066	0.3447	25.2574	1.4209	11.7196	34.0943	0.9958	
2016-01	1.0932	1.4501	14.6357	11.3819	4.0412	0.3477	24.8200	1.3086	11.7752	33.4362	1.0054	

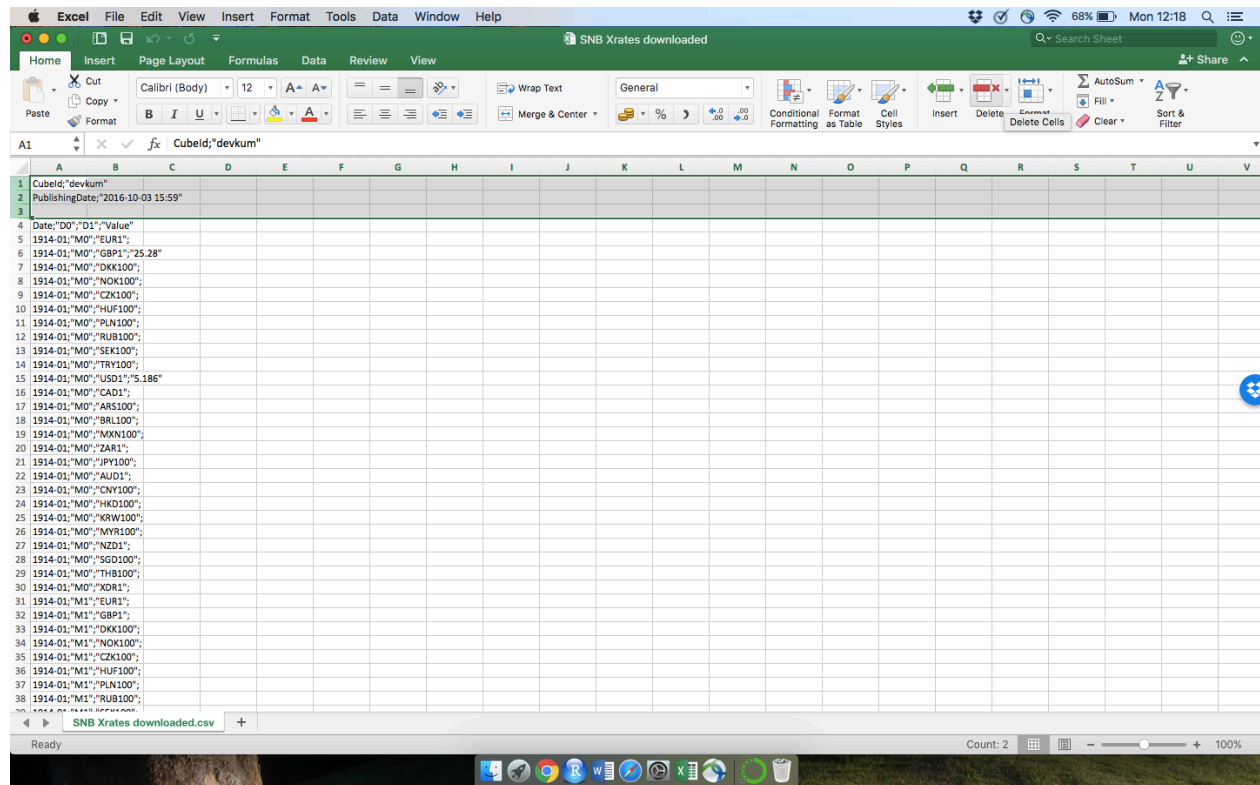
snb-data-devikum-de-...csv

Open the file to inspect it, and save it to a folder where it is convenient for this course. I have it in a folder called “Data”, which lies within the folder where I have all documents for this course.

The screenshot shows the SNB BNS website interface. The main content area displays the 'Monatsmittel' table, which lists exchange rates for various currencies. The table is filtered for 'Monatsmittel' and shows data for the period from 2015-09 to 2016-09. The currencies listed include EUR, GBP, DKK, NOK, CZK, HUF, PLN, RUB, SEK, TRY, USD, and CAD. A file explorer window is open, showing the file 'snb-data-devkum-de-...csv'.

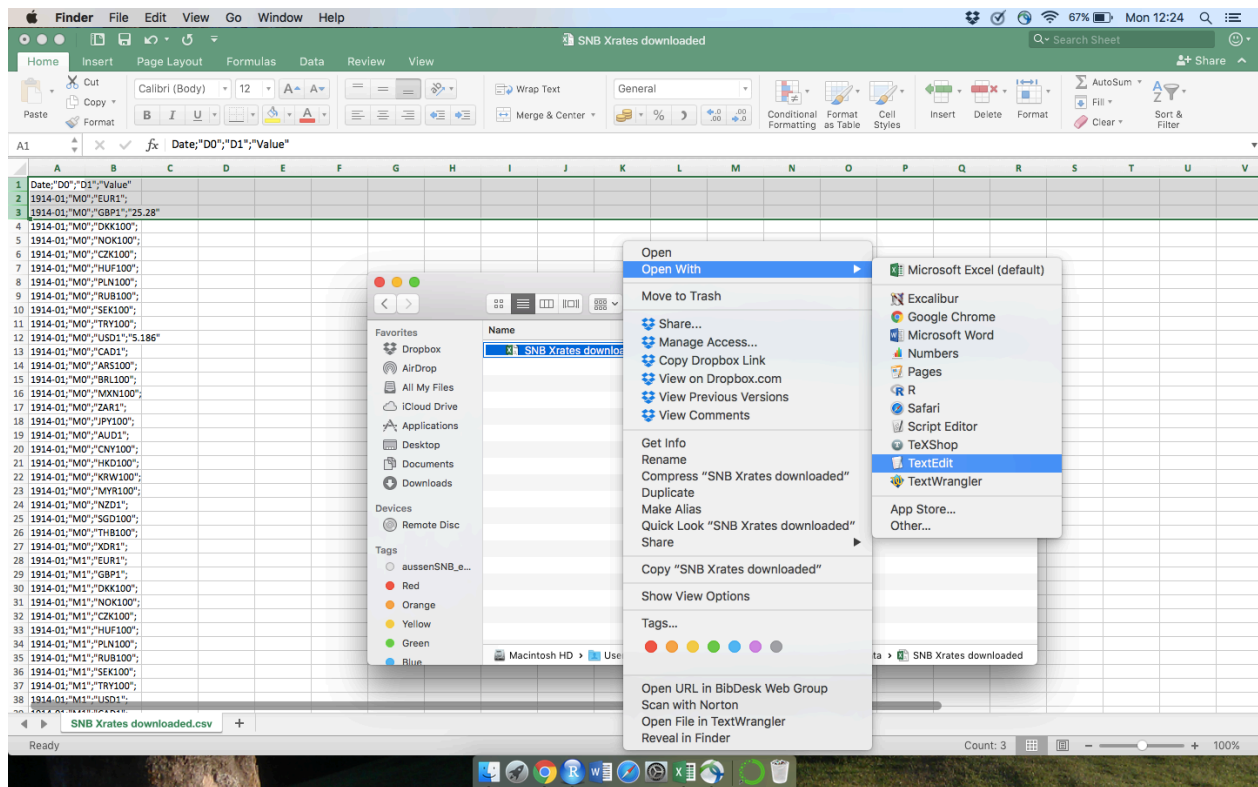
	Europa	Vereinigtes Königreich – GBP 1.- ^M	Dänemark – DKK 100.- ^M	Norwegen – NOK 100.- ^M	Tschechische Republik – CZK 100.- ^M	Ungarn – HUF 100.- ^M	Polen – PLN 100.- ^M	Russische Föderation – RUB 100.- ^M	Schweden – SEK 100.- ^M	Türkei – TRY 100.- ^M	Amerika	USA – USD 1.- ^M	Kanada – CAD 1.- ^M
2015-09	1.0918	1.4918	14.6345	11.7273	4.0299	0.3488	25.8818	1.4573	11.6186	32.2177	0.9716		
2015-10	1.0879	1.4847	14.5818	11.7127	4.0125	0.3497	25.6050	1.5345	11.6423	33.0673	0.9681		
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2016-01	1.0932	1.4501	14.6357	11.3819	4.0412	0.3477	24.8200	1.3086	11.7752	33.4362	1.0054		

I saved it as “SNB Xrates downloaded”. Delete the first three rows (selected and marked as gray in the below screenshot) and then save.

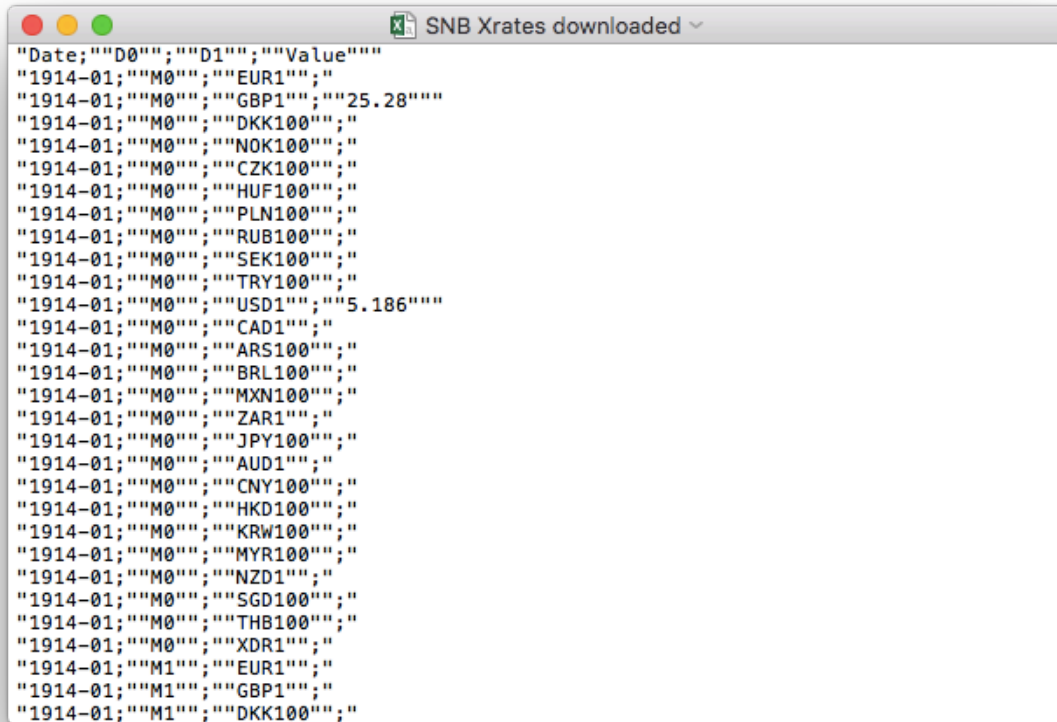


In your case, the file may look neat, but in my case, it looks pretty ugly. Everything is cramped into one column (see screenshot above). Reading the file into R will not make it look any better. If your file looks like mine, there is some additional work to do, as shown below. This has to do with the fact that Excel did not properly understand the “delimiter” that separates entries in columns. The data have a different delimiter than what Excel expects as default. In this case, the reason is that the *regional settings* of my device do not match those of the SNB.

If you also have this problem, then the best way to check what's wrong with the delimiter is to open the file with a text editor, e.g. TextEdit on a Mac, or Notepad on Windows. Go to the file finder/explorer and choose "Open With" and then one of the two programs, depending on your system.



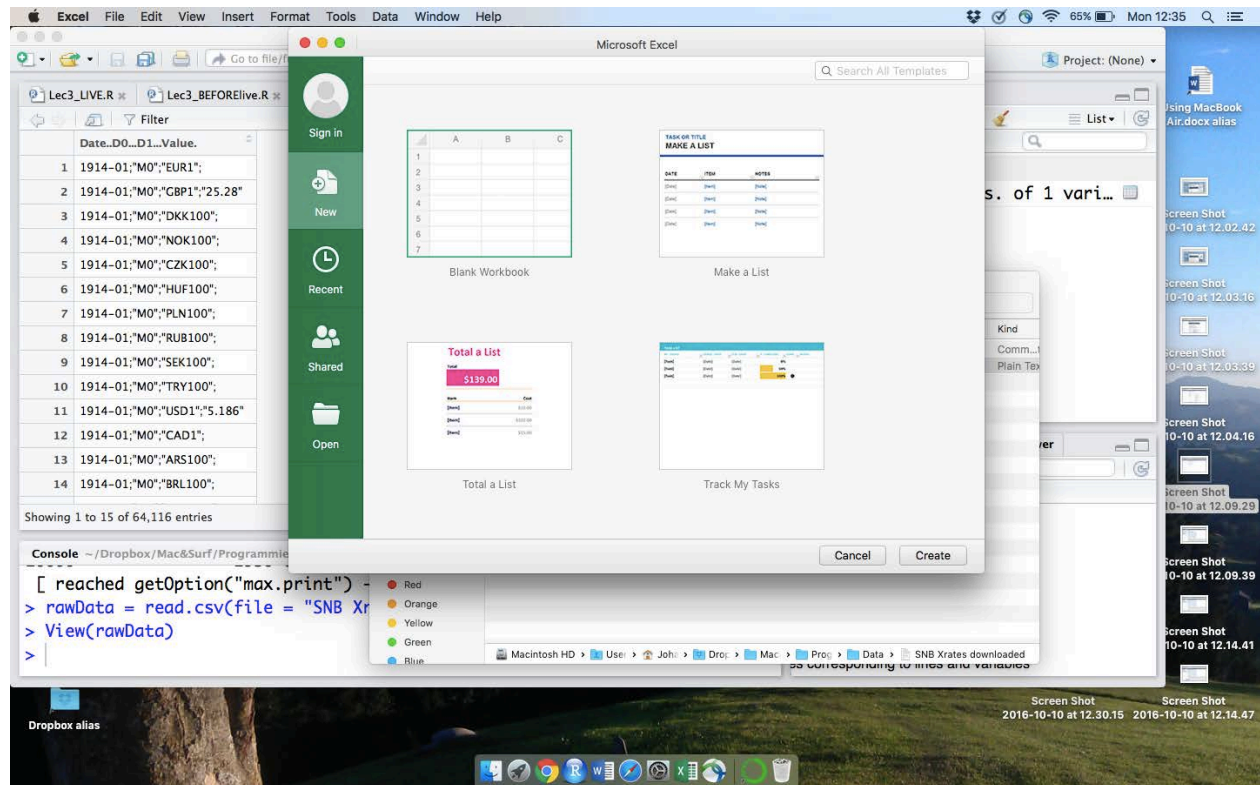
The result looks like this. Excel expects a single comma or semicolon. Instead, there are these weird double-double quotes that accompany the semicolon delimiter.



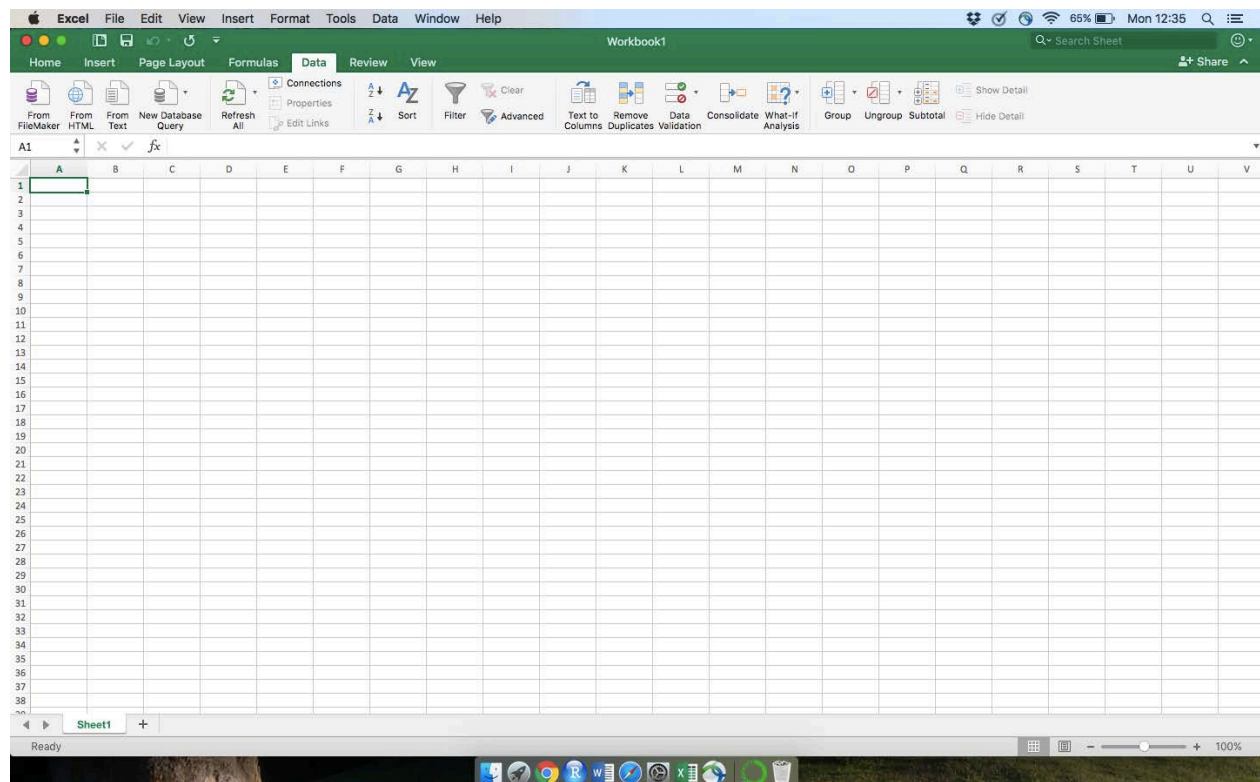
```
"Date";"D0";"D1";"Value""
"1914-01";"M0";"EUR1";"
"1914-01";"M0";"GBP1";"25.28""
"1914-01";"M0";"DKK100";"
"1914-01";"M0";"NOK100";"
"1914-01";"M0";"CZK100";"
"1914-01";"M0";"HUF100";"
"1914-01";"M0";"PLN100";"
"1914-01";"M0";"RUB100";"
"1914-01";"M0";"SEK100";"
"1914-01";"M0";"TRY100";"
"1914-01";"M0";"USD1";"5.186""
"1914-01";"M0";"CAD1";"
"1914-01";"M0";"ARS100";"
"1914-01";"M0";"BRL100";"
"1914-01";"M0";"MXN100";"
"1914-01";"M0";"ZAR1";"
"1914-01";"M0";"JPY100";"
"1914-01";"M0";"AUD1";"
"1914-01";"M0";"CNY100";"
"1914-01";"M0";"HKD100";"
"1914-01";"M0";"KRW100";"
"1914-01";"M0";"MYR100";"
"1914-01";"M0";"NZD1";"
"1914-01";"M0";"SGD100";"
"1914-01";"M0";"THB100";"
"1914-01";"M0";"XDR1";"
"1914-01";"M1";"EUR1";"
"1914-01";"M1";"GBP1";"
"1914-01";"M1";"DKK100";"
```

Luckily, there is a solution for this...

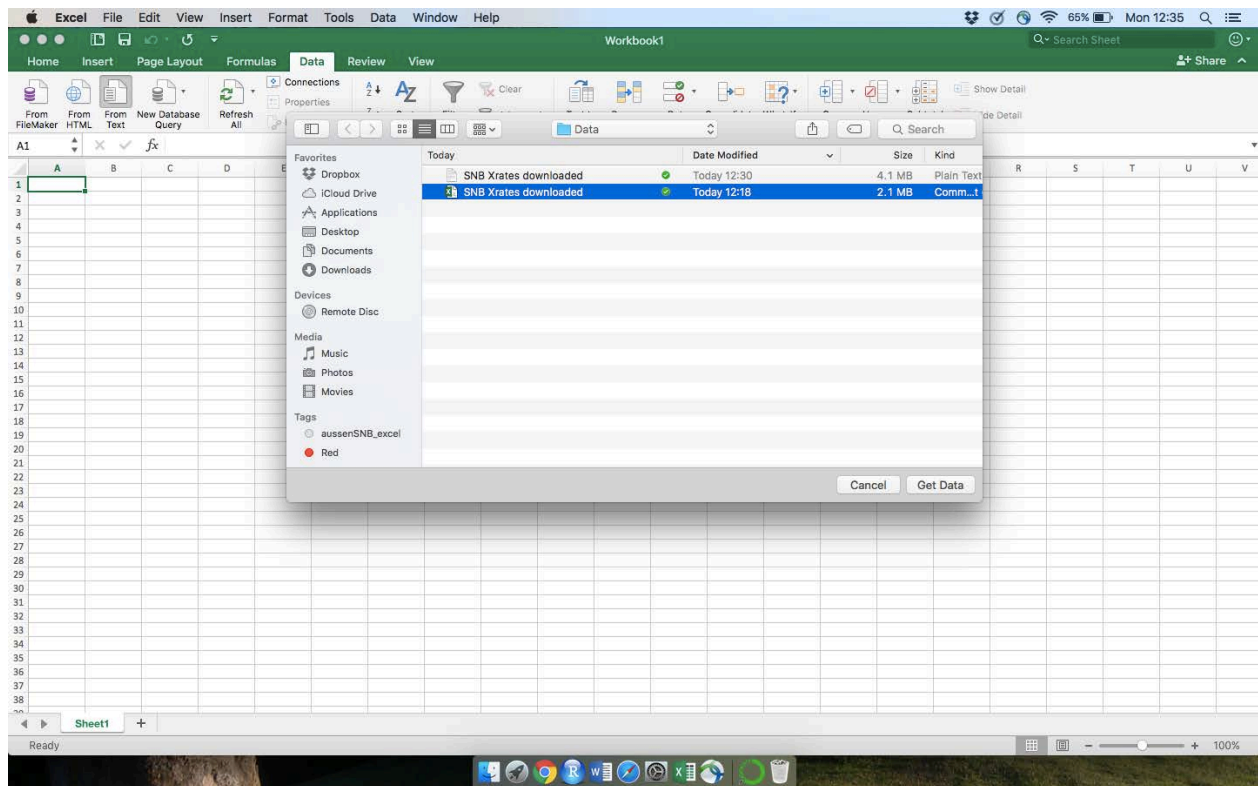
Close your file with the data (you may be asked whether you want to save your changes; you can choose “don’t save”), and open a blank workbook in Excel, as shown below.



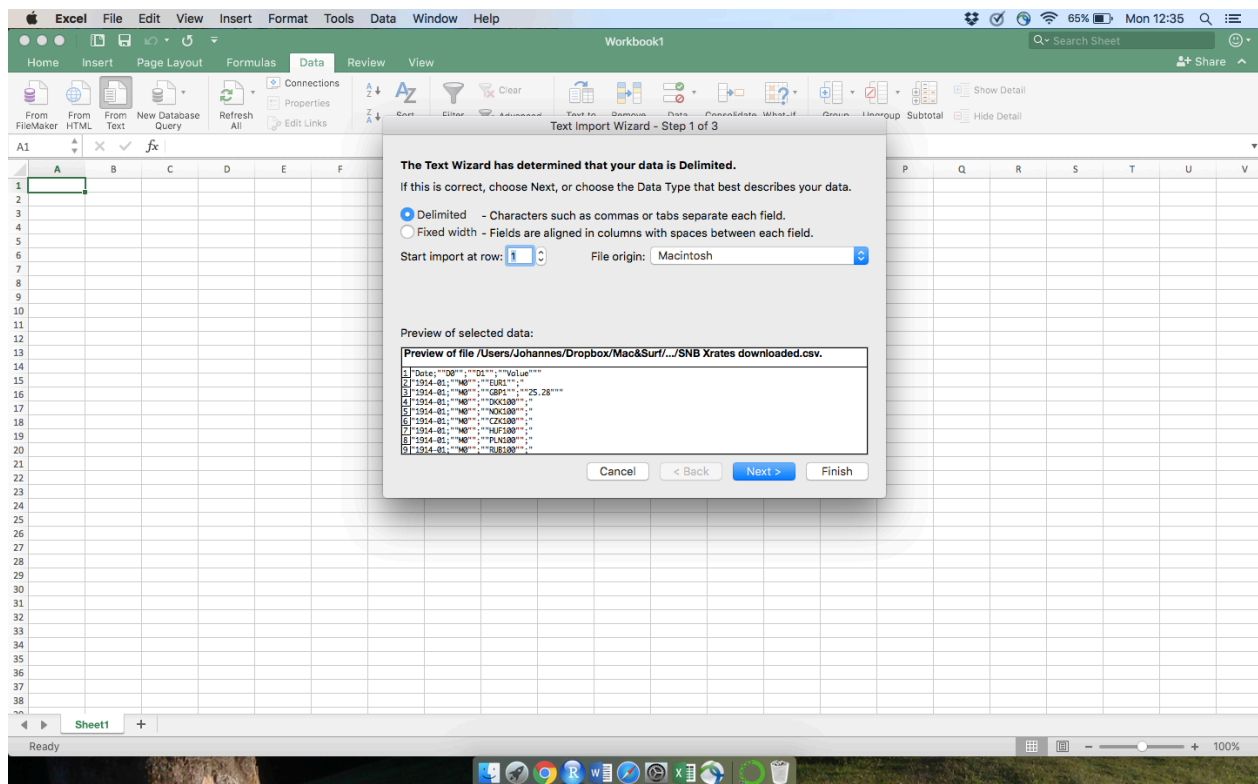
Go to the “Data” tab and choose “From Text” (third item from left).



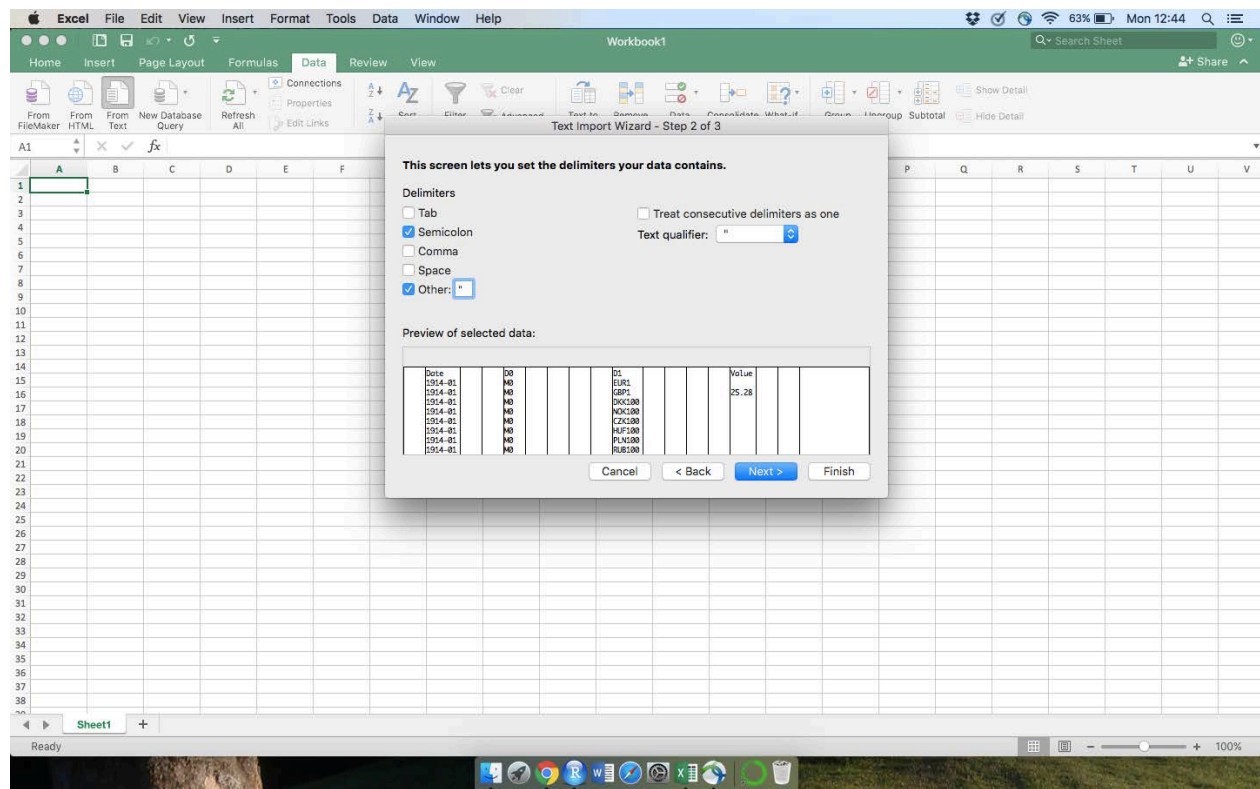
Select the data set in csv format with the data we want to make look neat. Then choose “Get Data”.



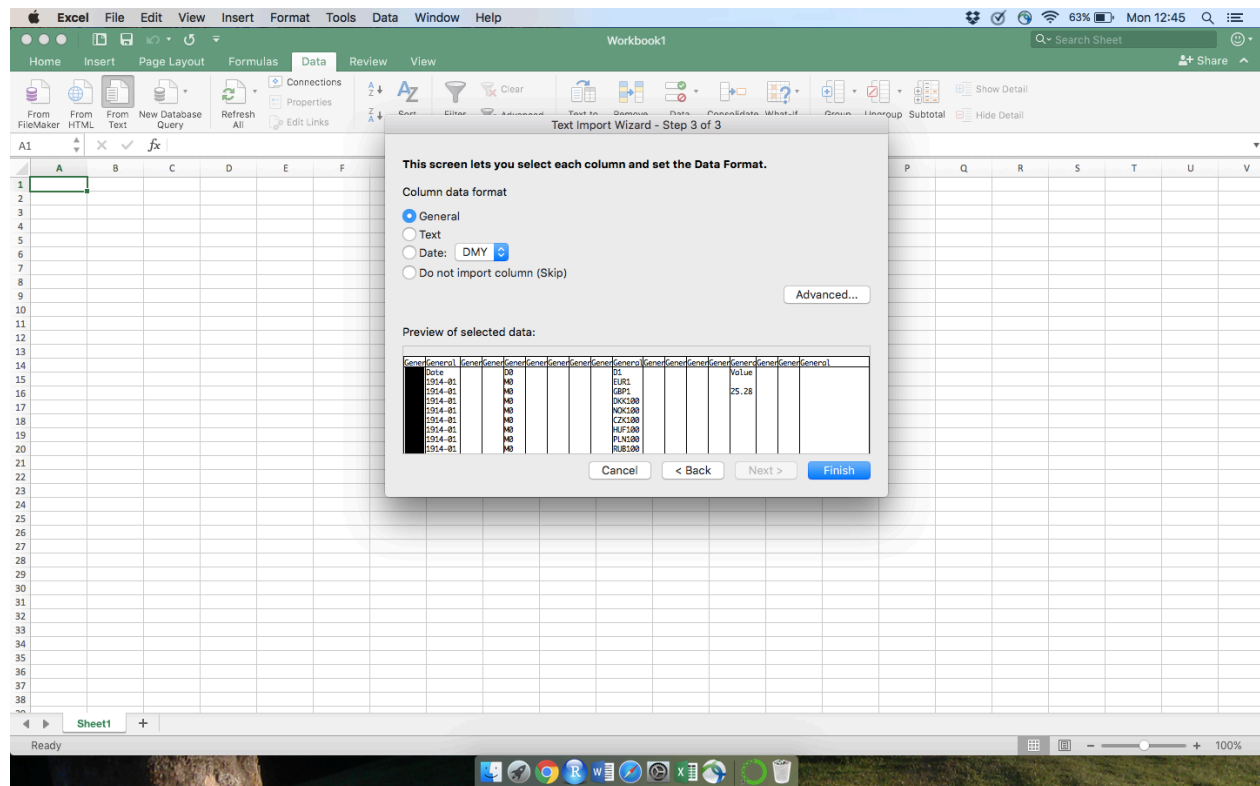
On the resulting Wizard, choose “Delimited”, and “Next”.



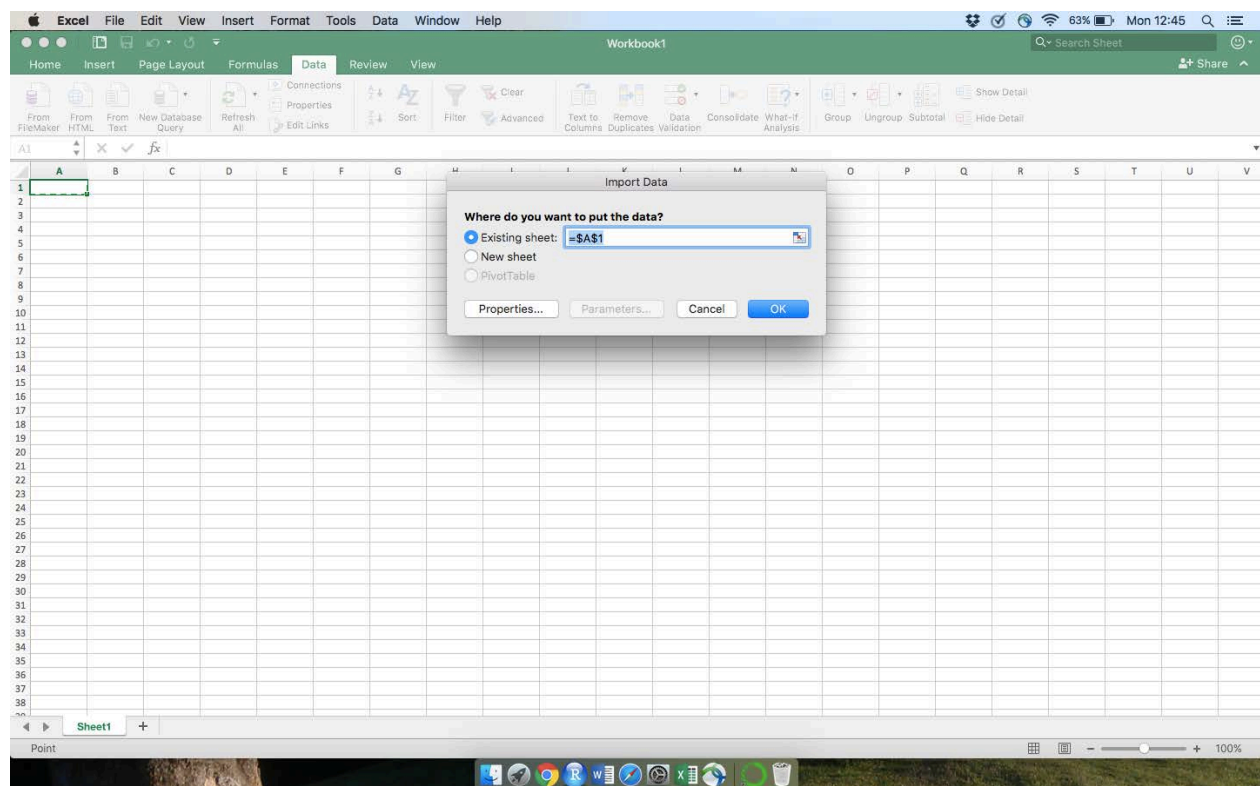
What you have to enter on the next screen depends a bit on how the data look exactly on your machine. In my case, it is checking “Semicolon” and “Other”, and filling a double quote sign into the field next to “Other”. This will also create a few empty columns, but that’s not too much of a problem, we will deal with that inside R. If the above solution does not work for you, inspect your data carefully in the text editor (as shown above) and let your imagination work! Sometimes it’s a bit of a puzzle, but keep trying!



The next screen is just fine, choose “Finish”...



... and “OK”.



Now it looks much better. You can delete the empty columns manually in excel. But this only works for small data sets. I prefer to do this inside R.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1		Date			DO					D1					Value								
2		1914-01			MO					EUR1													
3		1914-01			MO					GBP1					25.28								
4		1914-01			MO					DKK100													
5		1914-01			MO					NOK100													
6		1914-01			MO					CZK100													
7		1914-01			MO					HUF100													
8		1914-01			MO					PLN100													
9		1914-01			MO					RUB100													
10		1914-01			MO					SEK100													
11		1914-01			MO					TRY100													
12		1914-01			MO					USD1					5.186								
13		1914-01			MO					CAD1													
14		1914-01			MO					ARS100													
15		1914-01			MO					BRL100													
16		1914-01			MO					MXN100													
17		1914-01			MO					ZAR1													
18		1914-01			MO					JPY100													
19		1914-01			MO					AUD1													
20		1914-01			MO					CNY100													
21		1914-01			MO					HKD100													
22		1914-01			MO					KRW100													
23		1914-01			MO					MYR100													
24		1914-01			MO					NZD1													
25		1914-01			MO					SGD100													
26		1914-01			MO					THB100													
27		1914-01			MO					XDR1													
28		1914-01			M1					EUR1													
29		1914-01			M1					GBP1													
30		1914-01			M1					DKK100													
31		1914-01			M1					NOK100													
32		1914-01			M1					CZK100													
33		1914-01			M1					HUF100													
34		1914-01			M1					PLN100													
35		1914-01			M1					RUB100													
36		1914-01			M1					SEK100													
37		1914-01			M1					TRY100													
38		1914-01			M1					USD1													

Now save this file in **csv** format (e.g. with the name “SNB Xrates downloaded clean”). Do not save it in **xlsx** format (the default), since you will not be able to read the data into R in this way.

Go back to the SNB website for downloading data on exports and imports. I.e. go back to <https://data.snb.ch/de>. Go to the link “Volkswirtschaftliche Daten”. Scroll down to the section “Aussenwirtschaft”. Click on “Aussenhandel nach Warenarten”. Download from the “CSV (Alles)” link. Save the file to the same folder as the previous file on exchange rates. Give it a reasonable name like “SNB Aussenhandel downloaded”. Delete (again) the first three rows. If the file looks ugly i.e. everything is cramped into one column, repeat the procedure as for the previous file.