Financials & equities

Robin Burgers
Maarten Gubbels

Data support – NSM Library team

Feb 16th & 25th 2020
What’s the plan?

- Support

- About the databases

- FactSet basics
  - Index constituents (= example of defining sample)
  - Financials
  - Stock prices
  - Index returns

- Eikon basics
Support

- Contact the data librarians: datasupport-NSM@ubn.ru.nl
  • (short questions or make appointment)

- Mention: topic, sample and variables & historical timeframe, supervisor

- Visit our office: EOS 01.545

- Follow-up workshops as of March 4th

- https://libguides.ru.nl/be/data

- https://libguides.ru.nl/BE/FAQdata
Support

- **Eikon**: help (in desktop version)
- Contact with Eikon helpdesk *always* through the NSM data librarians
- **FactSet**: help → online assistant
- Elaborate help-section with e-learning, tipsheets etc.
- Or contact the data librarians or the FactSet helpdesk yourself
Selected content

FactSet and Eikon are a huge databases, with e.g.

- Aggregated accounting data & financial ratios for listed companies
- Historical stock prices, index returns, futures, options, bonds etc.
- Environmental, social and governance (CSR/ESG) data (Eikon only!)
- Exchange rates
- Macroeconomic data
- News, M&A, venture capital, private equity deals
- Company profiles, filings, league tables, real time data etc.
Considerations

- Very suitable for historical time series: coverage, depends on data type – usually at least c. 15 years, for equities up to 40 years
- Eikon is most suitable for huge amounts of data
- Mainly listed companies (non listed companies → consider Orbis)
- Mainly financial data (board related data → consider BoardEx)
- Coverage China limited (consider → CSMAR)
- M&A/event studies → modules in FactSet and Zephyr

For FactSet and Eikon some Excel skills are required!
Access: FactSet

- Through webversion, desktop version & Excel add-in
- Available on campus (computers in MSc and Central Library) and off-campus
- Account required → get one through the data librarians (datasupport-NSM@ubn.ru.nl)
- Processing account can take up to 1 week
- Download the software on your own device
FactSet: index constituents

Use the universal screening tool to create a sample, e.g. CAC 40 firms 2010-2011
FactSet: index constituents

Define your sample in 3 steps:
1. Apply criteria
2. Add static variables
3. Export to Excel to get historical data
FactSet: index constituents

Search for the indices/stock exchanges you need to get the constituents

In this case CAC 40.

Remove default index (S&P 500)
FactSet: index constituents

You get the *current* constituents by default.

To get historical index constituents (in this case 2010) → click on the formula bar (turns yellow) → change
FG_CONSTITUENTS(180454,0,CLOSE)
to
FG_CONSTITUENTS(180454,1/1/2010,CLOSE)
(or the year you need)
FactSet: index constituents

Add additional index formulas and change them to get constituents of other years.

You’ll see the number of results increase as the firms are added in the bottom of the screen.
FactSet: index constituents

Once finished defining your sample → add (static) variables in the bottom of your screen and remove useless variables. **Historical time series must downloaded in Excel**

Always add identifiers like the ISIN code!
FactSet: index constituents

Export to Excel
FactSet: financials

Make a new sheet → copy the codes in column A

Paste the copied codes transposed (right mouse click) in cell B1 of the new sheet

Add start and end dates for the years you need
FactSet: financials

First get the data for *one* firm → open the FactSet sidebar
FactSet: financials

Search & select the variable you need (in this case: total assets)

Select frequency etc. and **use cell reference for dates** and refer to the cells where you entered the dates

cells turn green with the output; click insert to finalize
FactSet: financials

In order to get the data for all the firms, change the formula in B6

=\text{FDS}(B1;"\text{FG\_PRICE}("&B3&","&B4&")")

to

=\text{FDS}(B1;"\text{FG\_PRICE}(&B$3&,&B$4&")")

and press \textit{ctrl-shift-enter} (to make an array formula)

Now select all the cells with data (here B6:B7) and use the fill-handle to copy the data right for all the codes
FactSet: financials

FactSet does not automatically refresh the data (you get #Calc) → click ‘Refresh’
FactSet: financials

To get the data in your dataset → copy the variables & the firm codes and use paste special (right mouse click) to paste transposed as values behind your data

Or paste transposed as values in another sheet and use =VLOOKUP to connect to an already existing dataset (with the FactSet firmID’s)
## FactSet: financials

**Result:**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Name</th>
<th>Stock Exchange</th>
<th>Euronext PARIS</th>
<th>Market Value</th>
<th>Sales</th>
<th>FE (in)</th>
<th>total assets 2019</th>
<th>total assets 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>400212</td>
<td>Bioguest SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>37.3</td>
<td>13'862.0</td>
<td>41'845.0</td>
<td>FR0000120503</td>
<td>3598</td>
</tr>
<tr>
<td>401225</td>
<td>Airbus SE</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>128.5</td>
<td>99'753.5</td>
<td>75'158.3</td>
<td>NLI0000235810</td>
<td>83187</td>
</tr>
<tr>
<td>400167</td>
<td>Veolia Environnement SA</td>
<td>Euronext PARIS</td>
<td>Utilities</td>
<td>22.6</td>
<td>12'789.8</td>
<td>30'217.9</td>
<td>FR0000124414</td>
<td>51427</td>
</tr>
<tr>
<td>400780</td>
<td>L'Oreal SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>254.5</td>
<td>142'631.6</td>
<td>31'778.4</td>
<td>FR0000120321</td>
<td>26084</td>
</tr>
<tr>
<td>406141</td>
<td>Livet Moal Hennessy Louis Vuitton</td>
<td>Euronext PARIS</td>
<td>Consumer Cyclical</td>
<td>345.6</td>
<td>174'528.5</td>
<td>55'243.0</td>
<td>FR0000121014</td>
<td>37164</td>
</tr>
<tr>
<td>418343</td>
<td>Cieagami SE</td>
<td>Euronext PARIS</td>
<td>Technology</td>
<td>118.6</td>
<td>19'847.7</td>
<td>15'569.2</td>
<td>FR0000125338</td>
<td>9968</td>
</tr>
<tr>
<td>406040</td>
<td>Poitiers Groupe SA</td>
<td>Euronext PARIS</td>
<td>Business Services</td>
<td>54.5</td>
<td>12'516.0</td>
<td>11'413.4</td>
<td>FR0000125577</td>
<td>14941</td>
</tr>
<tr>
<td>405270</td>
<td>Lafarge SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>104.3</td>
<td>9'299.9</td>
<td>10'172.2</td>
<td>FR0000125537</td>
<td>42494</td>
</tr>
<tr>
<td>406721</td>
<td>Lagardere SCA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>25.4</td>
<td>3'327.5</td>
<td>8'865.0</td>
<td>FR0000120123</td>
<td>10991</td>
</tr>
<tr>
<td>409830</td>
<td>Compagnie Generale des Etablissements</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>120.2</td>
<td>21'623.0</td>
<td>25'967.5</td>
<td>FR0000121261</td>
<td>19573</td>
</tr>
<tr>
<td>406232</td>
<td>Pernod Ricard SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>171.7</td>
<td>45'583.5</td>
<td>10'123.9</td>
<td>FR0000129593</td>
<td>27107</td>
</tr>
<tr>
<td>471729</td>
<td>Renault SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>68.7</td>
<td>20'311.6</td>
<td>67'740.1</td>
<td>FR0000131905</td>
<td>70197</td>
</tr>
<tr>
<td>483410</td>
<td>Schneider Electric SE</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>78.4</td>
<td>45'374.9</td>
<td>30'343.2</td>
<td>FR0000121972</td>
<td>31051</td>
</tr>
<tr>
<td>483477</td>
<td>Vicq SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>27.7</td>
<td>35'231.6</td>
<td>14'035.0</td>
<td>FR0000127771</td>
<td>58993</td>
</tr>
<tr>
<td>487145</td>
<td>Technip SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>164.4</td>
<td>#NA</td>
<td>#NA</td>
<td>FR0000131709</td>
<td>10222</td>
</tr>
<tr>
<td>517619</td>
<td>Orange SA</td>
<td>Euronext PARIS</td>
<td>Telecommunications</td>
<td>15.2</td>
<td>40'502.2</td>
<td>48'585.2</td>
<td>FR0000133308</td>
<td>94276</td>
</tr>
<tr>
<td>560507</td>
<td>Kering SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>552.6</td>
<td>69'789.0</td>
<td>16'121.5</td>
<td>FR0000121485</td>
<td>24894.5</td>
</tr>
<tr>
<td>564586</td>
<td>Carrefour SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>20.2</td>
<td>15'016.9</td>
<td>34'710.4</td>
<td>FR0000120172</td>
<td>53650</td>
</tr>
<tr>
<td>567173</td>
<td>Sanofi</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>82.6</td>
<td>103'042.0</td>
<td>49'667.7</td>
<td>FR0000125076</td>
<td>85284</td>
</tr>
<tr>
<td>568248</td>
<td>Accor SA</td>
<td>Euronext PARIS</td>
<td>Industriels</td>
<td>42.9</td>
<td>12'133.8</td>
<td>2'949.0</td>
<td>FR0000120404</td>
<td>8678</td>
</tr>
<tr>
<td>590233</td>
<td>STMicroelectronics NV</td>
<td>Euronext PARIS</td>
<td>Technology</td>
<td>17.1</td>
<td>15'534.6</td>
<td>9'664.0</td>
<td>NLI0000226223</td>
<td>9650.430472</td>
</tr>
</tbody>
</table>

Repeat the process for your other variables.
FactSet: stock prices

Same workflow, but select a stock variable (like price or return)

Do not paste them in your master data sheet, keep in vertical outlook → merge in Stata
FactSet: index performance

Search for the identifier of the index (magnifying glass) → connect with the variable you need (usually price or returns) and customize output.
Access: Eikon

- Available on 4 terminals in EOS, room 01.570

- Book timeslots of 2 hours (2x a week) through the Library Team (infofm@ubn.ru.nl)
  *state in the subject: ‘Eikon reservation’*

- Check availability in the Eikon Calendar → [https://libguides.ru.nl/BE/Eikon](https://libguides.ru.nl/BE/Eikon)
Eikon: basics

- Eikon / Datastream consists of 2 separate databases:
  - a ‘desktop version’ mainly for real time data, company profiles, screening etc.
  - an Excel add-in called ‘Thomson Reuters Datastream’ for most historical time series data

- Eikon desktop also has an Excel add-in, called ‘Thomson Reuters’
Eikon: basics

Eikon ‘desktop version’, consists of numerous apps

You can recognize it by the ‘black bar’ at the top of the screen
Eikon: financials

Data retrieval from Eikon in Excel, 2 basic ways:

**Static request**

![Static Request](image)

or

**Time series request**

![Time Series Request](image)
Eikon: financials

Time series request

Choose series (e.g. companies)

Case: R&D expenses of Shell, BP and Exxon Mobile, 2014-2017
Eikon: financials

Time series request
1. Search for companies [red] – search is very sensitive!
2. select as many companies as you like
3. Always search in the appropriate category! (here: equities) [green]
4. After you’re done, click ‘use’ [pink]
Eikon: financials

Time series request

Choose datatypes (variables)
**Eikon: financials**

**Time series request**
Choose as many datatypes as you like
As long as:
- They are in the same category as the series (here: equities)
- Have the same interval (e.g. yearly)
- Are not static
Eikon: financials

Time series request

Click on an item for a definition
Eikon: financials

Time series request
Select always at least the (start) date(s) and the interval
Eikon: financials

Time series request
Adjust some more (optional) – just play with it!

change currency

transpose output
display currency

eMBED to be able to edit it later
Eikon: financials

Time series request
Display custom header to add static variables (e.g. ISIN code, industry codes)

Make sure you choose static variables here!

And submit!
Eikon: financials

Time series request
The result → R&D expenses of 3 companies, with name, SIC (=industry code), ISIN, currency and values

To edit the output -> select cell ‘Name’ (A1) and click ‘edit request’
Eikon: stock prices

Time series request
Works more or less the same; take as many companies as you like, but:

- Take daily prices (week, month, year is no average!) or calculate average with Eikon formula

- Optional: to avoid ‘padding’ (same price on some non-trading days as day before), use P#S
### Eikon: stock prices

#### Time series request

Result (not transposed):

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Currency</th>
<th>B</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1-2014</td>
<td>WCD7021</td>
<td>BP</td>
<td>2911</td>
<td>1311</td>
<td>2911</td>
</tr>
<tr>
<td>2-1-2014</td>
<td></td>
<td>B</td>
<td>488.85</td>
<td>25.92</td>
<td>99.75</td>
</tr>
<tr>
<td>3-1-2014</td>
<td></td>
<td>ROYAL DUTCH SI EXXON MOBIL (#$)</td>
<td>487.9</td>
<td>26.065</td>
<td>99.51</td>
</tr>
<tr>
<td>6-1-2014</td>
<td></td>
<td>EXXON MOBIL (#$)</td>
<td>488.95</td>
<td>25.81</td>
<td>99.66</td>
</tr>
<tr>
<td>7-1-2014</td>
<td></td>
<td></td>
<td>494</td>
<td>26.03</td>
<td>101.07</td>
</tr>
<tr>
<td>8-1-2014</td>
<td></td>
<td></td>
<td>492.85</td>
<td>25.965</td>
<td>100.74</td>
</tr>
<tr>
<td>9-1-2014</td>
<td></td>
<td></td>
<td>495.3</td>
<td>25.99</td>
<td>99.76</td>
</tr>
<tr>
<td>10-1-2014</td>
<td></td>
<td></td>
<td>497</td>
<td>26.35</td>
<td>100.52</td>
</tr>
<tr>
<td>11-1-2014</td>
<td></td>
<td></td>
<td>495.8</td>
<td>26.275</td>
<td>98.55</td>
</tr>
<tr>
<td>14-1-2014</td>
<td></td>
<td></td>
<td>491.05</td>
<td>26.175</td>
<td>99.12</td>
</tr>
<tr>
<td>15-1-2014</td>
<td></td>
<td></td>
<td>492.85</td>
<td>26.25</td>
<td>98.78</td>
</tr>
<tr>
<td>16-1-2014</td>
<td></td>
<td></td>
<td>485.45</td>
<td>26.36</td>
<td>98.94</td>
</tr>
<tr>
<td>17-1-2014</td>
<td></td>
<td></td>
<td>491.05</td>
<td>26.35</td>
<td>99.16</td>
</tr>
<tr>
<td>19-1-2014</td>
<td></td>
<td></td>
<td>494.3</td>
<td>26.34</td>
<td>99.34</td>
</tr>
<tr>
<td>21-1-2014</td>
<td></td>
<td></td>
<td>491.3</td>
<td>26.295</td>
<td>98.35</td>
</tr>
<tr>
<td>22-1-2014</td>
<td></td>
<td></td>
<td>493.6</td>
<td>26.655</td>
<td>97.88</td>
</tr>
<tr>
<td>23-1-2014</td>
<td></td>
<td></td>
<td>488.15</td>
<td>26.48</td>
<td>96.97</td>
</tr>
<tr>
<td>24-1-2014</td>
<td></td>
<td></td>
<td>486.65</td>
<td>26.15</td>
<td>94.85</td>
</tr>
<tr>
<td>27-1-2014</td>
<td></td>
<td></td>
<td>475.8</td>
<td>25.89</td>
<td>94.92</td>
</tr>
<tr>
<td>28-1-2014</td>
<td></td>
<td></td>
<td>476.9</td>
<td>25.785</td>
<td>95.65</td>
</tr>
<tr>
<td>29-1-2014</td>
<td></td>
<td></td>
<td>476.9</td>
<td>25.755</td>
<td>95.11</td>
</tr>
<tr>
<td>30-1-2014</td>
<td></td>
<td></td>
<td>477.9</td>
<td>25.145</td>
<td>93.99</td>
</tr>
</tbody>
</table>
Eikon: index constituents

Static request
Find series to search for the index.

Constituents are available in lists per index

Case: companies AEX, March 2012
Eikon: index constituents

Static request
Search for the index (AEX) in the category *constituent lists*. 
Eikon: financials

Static request
Click on the blue code (LAMSTEOE) to select it.
(you can select multiple lists one by one)
Eikon: index constituents

Static request
By default you get the current companies on the AEX → add month and last 2 digits of the year to the code to get the historical constituents.
E.g. LAMSTEOE March 2012 = LAMSTEOE0312

Add necessary static datatypes:
e.g. name, ISIN, mnemonic (Datastream code) etc.
Eikon: index constituents

Static request

Result:

You can do multiple months/years in one request

Use the ISIN-codes/mnemonics to retrieve financial data.

<table>
<thead>
<tr>
<th>Type</th>
<th>NAME</th>
<th>ISIN CODE</th>
<th>MNEMONIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>922956</td>
<td>AEGON</td>
<td>NL0000803709</td>
<td>H:AEGN</td>
</tr>
<tr>
<td>916642</td>
<td>KONINKLIJE AHOLD DELHAIZE</td>
<td>NL0017940937</td>
<td>H:AD</td>
</tr>
<tr>
<td>929286</td>
<td>AIR FRANCE-KLM</td>
<td>FR0000031122</td>
<td>F:UTA</td>
</tr>
<tr>
<td>912643</td>
<td>AKZO NOBEL</td>
<td>NL0000009312</td>
<td>H:AKZA</td>
</tr>
<tr>
<td>74017L</td>
<td>APERAM</td>
<td>LU0039974904</td>
<td>H:APAM</td>
</tr>
<tr>
<td>899069</td>
<td>ARCELORMITTAL</td>
<td>LU0359757687</td>
<td>H:MT</td>
</tr>
<tr>
<td>152001</td>
<td>ASML HOLDING</td>
<td>NL0010275215</td>
<td>H:ASML</td>
</tr>
<tr>
<td>922358</td>
<td>BOSKALIS WESTMINSTER</td>
<td>NL0000852380</td>
<td>H:BOSK</td>
</tr>
<tr>
<td>905903</td>
<td>CORIO DEAD - 01/04/15</td>
<td>NL0000286967</td>
<td>H:VIB</td>
</tr>
<tr>
<td>775426</td>
<td>DSM KONINKLIJE</td>
<td>NL0000005827</td>
<td>H:DSM</td>
</tr>
<tr>
<td>307521</td>
<td>FUGRO</td>
<td>NL0000352563</td>
<td>H:FUR</td>
</tr>
<tr>
<td>905001</td>
<td>HEINEKEN</td>
<td>NL0000009163</td>
<td>H:HB</td>
</tr>
<tr>
<td>531865</td>
<td>ING Groep</td>
<td>NL0011821202</td>
<td>H:INGA</td>
</tr>
<tr>
<td>142440</td>
<td>KPN</td>
<td>NL0000009082</td>
<td>H:KPN</td>
</tr>
<tr>
<td>933031</td>
<td>PHILIPS ELTN.KONINKLIJE</td>
<td>NL0000005538</td>
<td>H:PHIL</td>
</tr>
<tr>
<td>681714</td>
<td>POSTNL</td>
<td>NL0000973516</td>
<td>H:PNL</td>
</tr>
<tr>
<td>505482</td>
<td>RANDESTAD HOLDING</td>
<td>NL0000379121</td>
<td>H:RAND</td>
</tr>
<tr>
<td>981526</td>
<td>RELX</td>
<td>NL0006144405</td>
<td>H:REN</td>
</tr>
<tr>
<td>902178</td>
<td>ROYAL DUTCH SHELLA</td>
<td>GB00B30MQLX9</td>
<td>H:RDSA</td>
</tr>
<tr>
<td>916775</td>
<td>SBM OFFSHORE</td>
<td>NL0000360618</td>
<td>H:SBMO</td>
</tr>
<tr>
<td>75776X</td>
<td>TNT EXPRESS DEAD - 04/07/16</td>
<td>NL0009735424</td>
<td>H:TNTE</td>
</tr>
<tr>
<td>31102D</td>
<td>TOM TOM</td>
<td>NL0000387058</td>
<td>H:TOM</td>
</tr>
<tr>
<td>932422</td>
<td>UNIBAIL-RODAMCO SE REIT</td>
<td>FR0000124711</td>
<td>H:UBL</td>
</tr>
<tr>
<td>905478</td>
<td>UNILEVER DR</td>
<td>NL0000009355</td>
<td>H:UNIL</td>
</tr>
<tr>
<td>932828</td>
<td>WOLTERS KLUWER</td>
<td>NL0000395903</td>
<td>H:WWSG</td>
</tr>
</tbody>
</table>
**Eikon: index performance**

**Time series request**
Choose an index (or multiple indices) as series in the category *equity indices*.

**Case**: S&P 100 and FTSE 100 daily price and return index, last 5 years.
Eikon: index performance

Time series request
Choose appropriate datatypes (category *equity indices*), e.g. Return Index (RI) and Price Index (PI). Choose RI#S and PI#S to avoid padding on non-trading days.
Three things to (definitely) remember

- 2 steps: create sample & get the data (Excel add-in)
- Always request identifiers (especially the ISIN-code)
- Come to follow-up workshops from March 4th onwards for assistance
  https://libguides.ru.nl/BE/workshops

ANY QUESTIONS?