The Financial Mathematics and Computation Cluster (FMC) was established in 2009. FMC is funded by Science Foundation Ireland and Industry. Further details about FMC are in the appendix and http://www.fmc-cluster.org/

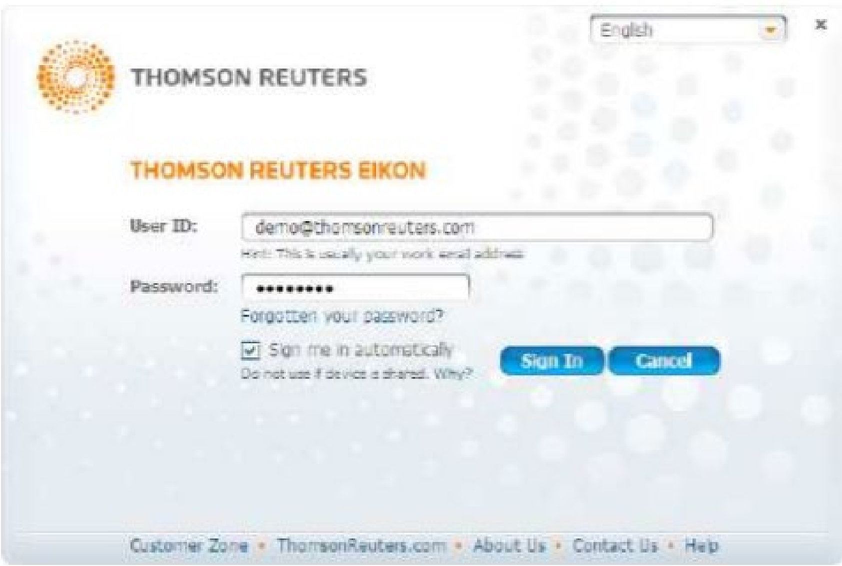
Note: Databases are located in standalone computers in the Financial Data room.

## Thomson Reuters Eikon (formerly Datastream)

Thomson Reuters Eikon is a financial data platform to monitor and analyse financial information. It includes data on financial markets, financial news, macro data etc. with analytics and trading tools. The data covers over 280,000 firms listed in stock exchanges around the world, from the 1970's onwards. Data is updated on a daily basis, allowing for an up-to-date offering for the purposes of academic research, as well as for real-time analysis of financial data.

### Getting started with Eikon

1. Click on the **Thomson Reuters Eikon** on your desktop.
2. Enter the **User ID and Password** in the corresponding fields in the login dialog. The usernames/passwords can be found at the following login page: https://intranet.ucd.ie/onlinelib/special_logins/index.html
3. Click **Sign in.**

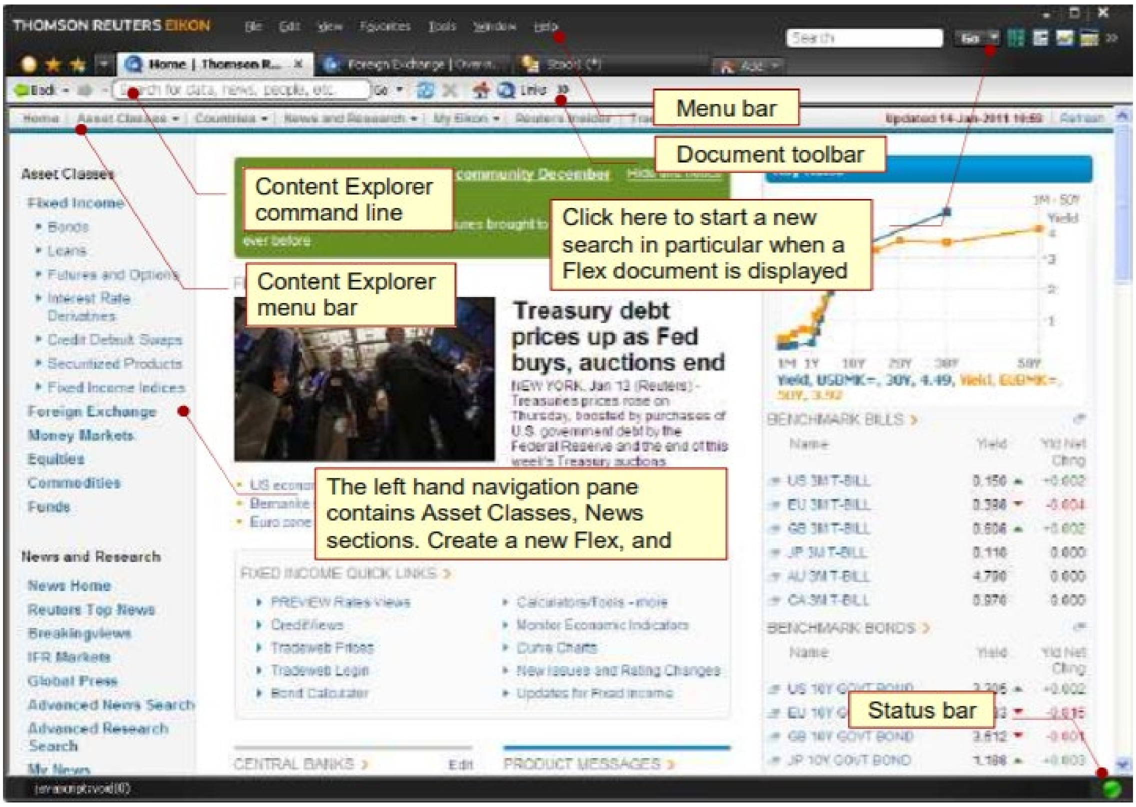




### Content Explorer

**Content Explorer** is the one stop shop for all Eikon content

1. The Home Page provides you with information tailored to your job role.
2. Guides provide you with an intuitive way to discover Thomson Reuters content.

3. Entity Views give you all the in-depth content on financial instruments and countries.
4. Search allows you to find content, people, commentaries.




- Explore data by Asset Class
- Explore data by Country

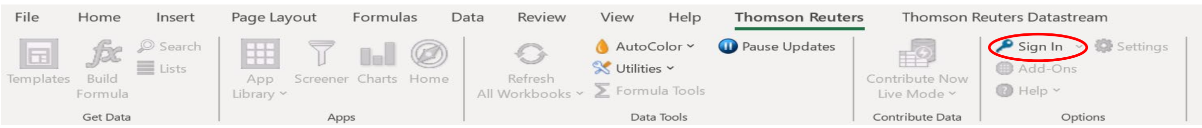
**Advantage:** Good for real-time economic and financial analysis.

**Disadvantage:** Not good for extracting large amounts of historical data for academic research.

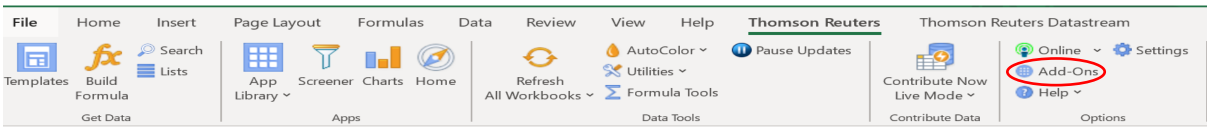
**To extract larger amounts of data, Eikon provides an Excel API.**

**Using Eikon via Excel API**

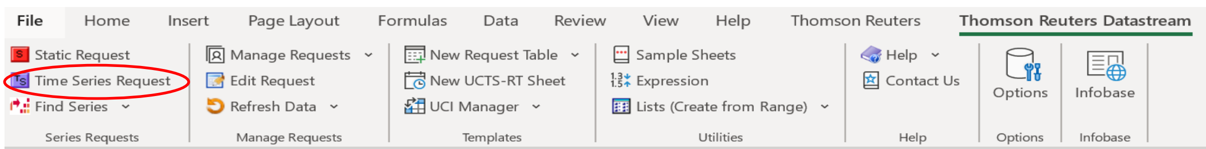
1. Once you have signed-in to Eikon, open Microsoft Excel. A tab for **Thomson Reuters** should show up
2. Click on the **Sign In** button.



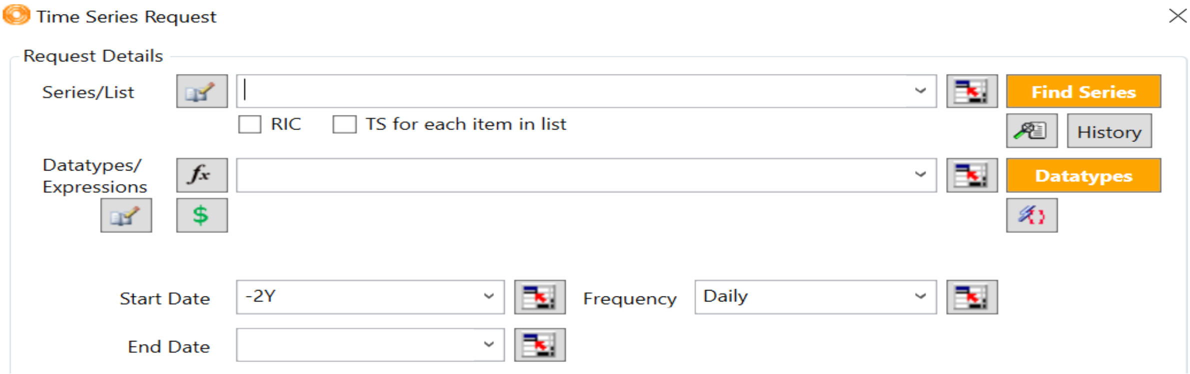

3. Historical data can then be downloaded using the **Thomson Reuters Datastream** tab. To enable it, click on the **Add-Ons** button and install Thomson Reuters Datastream from there.



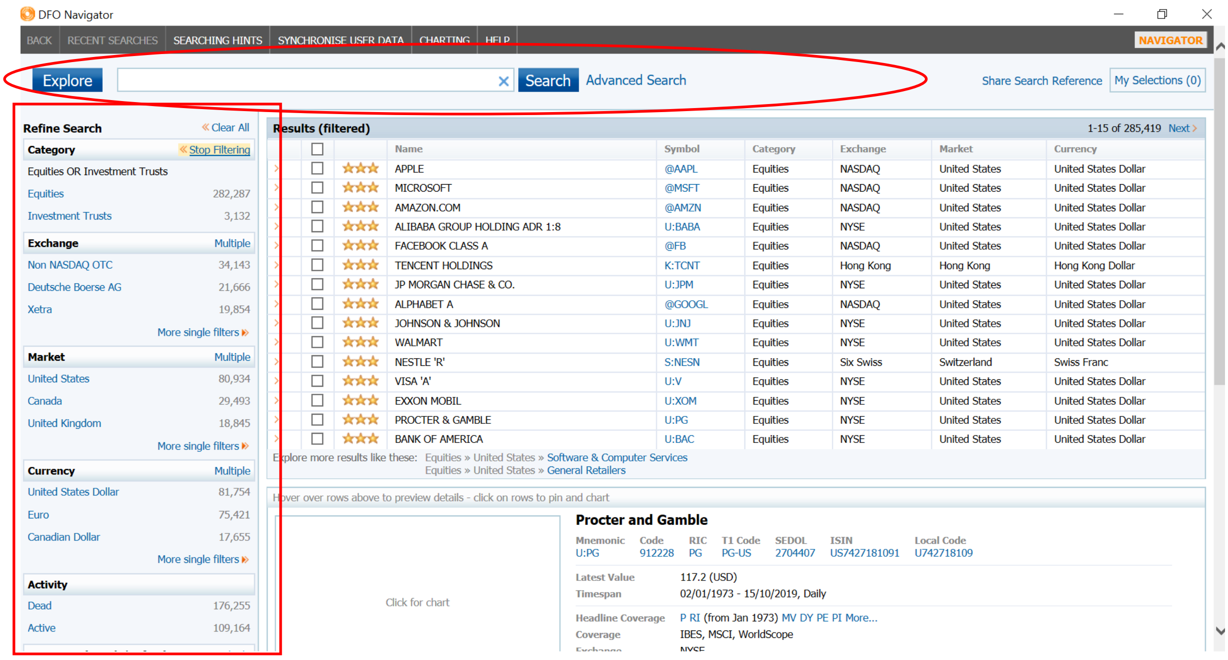

4. You then need to restart Excel, and you will be set-up on Eikon and Datastream to import historical data into Excel.
5. Historical data can be selected and downloaded from the "Time Series Request" button.



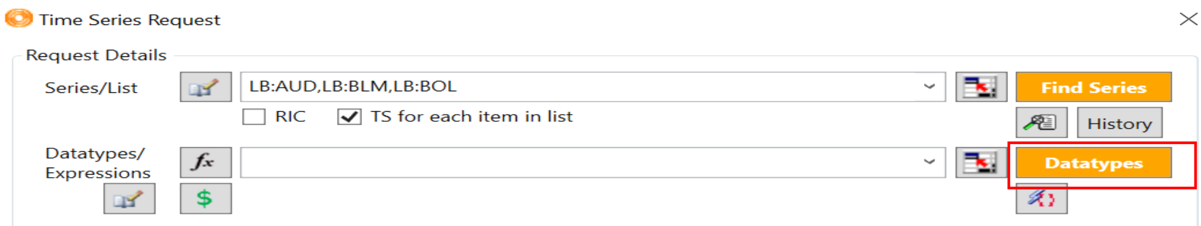
6. Series/List tab allows you to select the firms that you wish to obtain data for.
7. Datatypes/Expressions allows you to select the data that you wish to download for you selected firms.

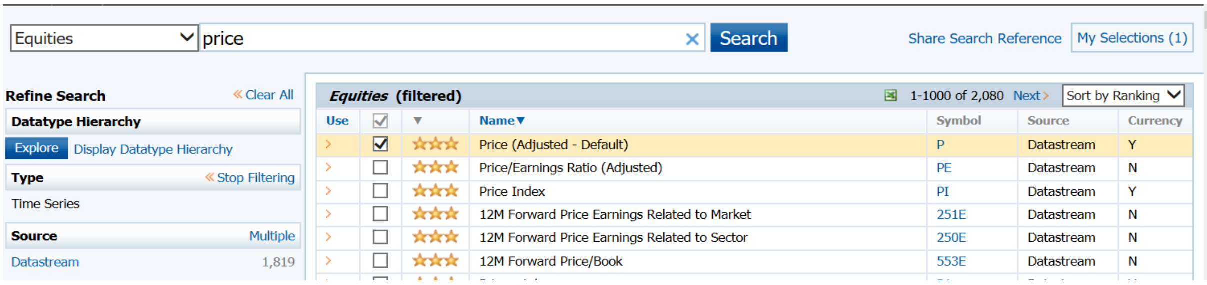



8. To select the firms, click on the Find Series button besides Series/List
9. If you already know your firms of choice, you can search for them individually, by name or ticker.
10. Alternatively, you can filter firms by Exchange, Geographical Market, currency, etc.

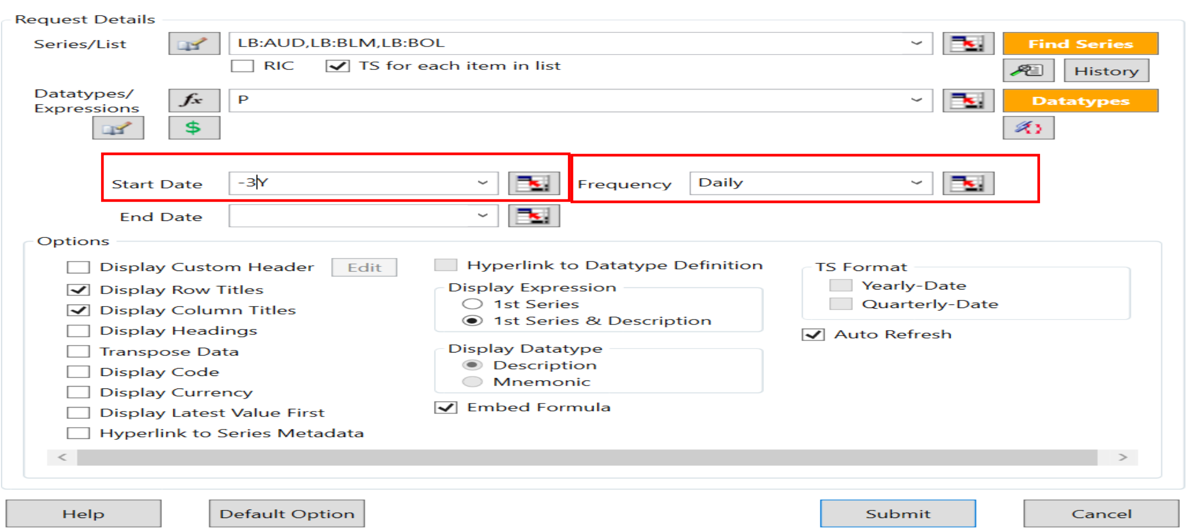



11. To obtain the data pertaining to the selected firms, click on the “Datatypes” button.






12. Adjust the start date to reflect the time period. In this case, "-3Y" represents three years of data, ending the last trading day.
13. You can select the frequency of your data as daily, weekly, monthly, quarterly or annual.
14. Click on **Submit**, and the data should be exported into excel.




## References


Eikon User Guide:
https://cefr.uel.edu.vn/Resources/Docs/SubDomain/cefr/Eikon%20User%20Guide.pdf

## Industry

FMC$^2$ has developed successful research collaborations with international and domestic financial services companies and organisations. These help ensure the industry relevance of FMC$^2$'s research.

FMC$^2$ works with multiple external partners including Bank of Ireland, Deloitte Ireland, Citibank Europe, The Institute of Banking, Avolon, AerCap, GECAS, SNECMA, SMBC Aviation Capital and KPMG Ireland.

The formal collaboration between this research cluster and the private sector leads creates a benefit-in-kind situation where company sponsorship creates funding for research projects. In turn the companies benefit from research expertise from FMC$^2$ members and access to a  pipeline of trained quality researchers.

## Who are we?

The academic principal investigators and funded investigators involved are:
John Cotter (Director, UCD)
Don Bredin (UCD)
Gregory Connor (Maynooth University)
Paolo Guasoni (DCU)
Julie Byrne (UCD)
Thomas Conlon (UCD)
Cal Muckley (UCD)
Conall O'Sullivan (UCD)
The cluster supports a research cluster manager and a team of postdoc and PhD researchers based at UCD, DCU and Maynooth University.

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FMC$^2$
Financial Mathematics and Computation Research Cluster


www.fmc-cluster.org

Science Foundation Ireland

# Financial Mathematics and Computation Cluster (FMC$^2$)

FMC$^2$ is a *research collaboration* between Industry, University College Dublin, Dublin City University and Maynooth University. This research group brings together complementary expertise in *financial mathematics, financial economics and computational finance* to create a holistic research programme in asset and risk management.

In addition to providing support for the innovation activities of Irish-based international financial companies, a pivotal outcome of the activities of FMC$^2$ is the creation of a supply of highly skilled personnel, trained postdoctoral researchers and PhD graduates, with world-class quantitative modelling skills who will support the future growth of financial service exports.

## The Vision

*The objective of FMC$^2$ is to create a globally recognised research centre that will provide a critical underpinning for the future development of the international financial services sector in Ireland.*

FMC$^2$ is funded by Science Foundation Ireland's Strategic Partnership programme. The object of this programme is to create partnerships between academia and industry in order to address crucial research questions, and to support the growth of research and development capacity in companies located in Ireland.

**VAR**

- Factor Modelling
- Dynamic Factor Structure of European Security Market Return
- Risk Measures, Connectivity and Impact on the Real Economy

**Valuation**

- Pricing Real Assets – Finalization, Policy and Market Implications
- Aircraft Finance and Leasing
- Energy prices and the Impact on Investment Decisions
- Valuation of contracts with embedded inflation linked options

**Risk**

- Operational Risk – Measurement and Mitigation
- Measuring and mitigating operational risks in financial institutions
- Operational Risk in LIBOR and other Benchmark Markets
- Rogue Trading and Banking

**www.fmc-cluster.org**