

Streamlining International Stock Market Data: Developing an Automated API-Based Extraction Tool

Keywords: International Stock Market Data, API Integration, Automation, Datastream, LSEG/Refinitiv

Workspace, Python Programming, Error Handling

Project description

Access to accurate and up-to-date international stock market data is crucial for financial analysts, investors, and academic researchers. Extracting this data through Excel request tables from Datastream, although effective, can be time-consuming and inflexible. As the volume of financial data grows and the speed of financial markets increases, there is a pressing need for more efficient methods of data extraction and analysis.

This project aims to address these challenges by developing an automated tool for the extraction of international stock market data at a monthly level using the API from LSEG/Refinitiv Workspace. This tool will replace the current Excel-based extraction method, offering a more efficient, flexible, and reliable solution for data retrieval.

The student will begin by familiarizing themselves with the LSEG/Refinitiv API, understanding its structure, capabilities, and how it can be utilized to extract stock market data. Following this, the student will design and develop a codebase in Python that interfaces with the API to automate data extraction tasks. The code will be designed with usability in mind, ensuring that it is easy for users to operate and adapt. This includes adding new variables for download or modifying the frequency of data retrieval.

A significant component of the project will be the implementation of robust error handling and interruption recovery mechanisms. Given the unpredictability of network conditions and the potential for data retrieval interruptions, the tool will be equipped to manage such incidents gracefully, ensuring data integrity and completeness.

Furthermore, the student will develop documentation and user guides that provide clear instructions on how to use the tool, adapt it to meet specific requirements, and troubleshoot common issues. This documentation will be critical in ensuring that the tool can be effectively used and maintained by others in the future.

Throughout the project, the student will work closely with the supervisor, receiving guidance on project milestones, and best practices in financial data extraction and software development. The successful completion of this project will not only enhance the efficiency and effectiveness of international stock market data retrieval but also contribute valuable insights and tools to researchers in asset pricing.

What we are looking for

- Strong analytical and project management skills
- Determination and passion for your areas of expertise
- Good Python programming skills
- Interest to work at the intersection of finance and IT
- 1 or 2 persons

What we offer

- Knowledge in quantitative finance, corporate finance and machine learning
- Kick-off session including introduction to relevant finance and/or business topics
- Experience with IDPs
- Open dialogue and support
- Access to prime capital markets databases (Bloomberg, Datastream, Thomson Reuters, etc)
- Potential for publication and/or evaluation of future use cases
- Both single and group projects are possible

Interested?

Please send an e-mail with CV, academic transcript and your preference for this project to sebastian.mueller.hn@tum.de

Questions?

In case of any (e.g. topic related) questions, please contact Sebastian Müller (sebastian.mueller.hn@tum.de)

References

Eikon Data API: <https://developers.lseg.com/en/api-catalog/eikon/eikon-data-api/quick-start>