Professorship of Finance
Center for Digital Transformation
TUM School of Management
Technical University of Munich

Establishing an Equity Anomaly Publication Library

Keywords: Natural Language Processing, Generative AI, Textual analysis, Web scraping

Project description

Equity pricing anomalies refer to patterns or deviations from the efficient market hypothesis (EMH), where equity prices do not align with theoretical expectations based on available information. These anomalies are often explained by various factors, such as behavioral biases, market inefficiencies, or informational asymmetries. Furthermore, they can provide valuable insights for investors, researchers, and policymakers to make informed decisions. However, with the vast amount of research being published in top-tier journals and outlets, it has become increasingly challenging to keep track of the latest findings and developments in this field. Moreover, the literature on equity pricing anomalies is vast and constantly evolving, making it difficult to identify the most relevant and impactful studies.

With the tremendous increase in context understanding and reasoning power of recent Large Language Models (LLMs), especially in the financial domain, this endeavor may be automated.

In the scope of this project, the student will be responsible for creating a comprehensive library of equity pricing anomaly publications. To this end they will develop a method to automatically identify and extract relevant information from these publications, including but not limited to metadata, anomaly type, and outlines of the employed statistics.

To achieve this, the student will employ state-of-the-art advances in Natural Language Processing (NLP) to identify publications on the topic from a list of esteemed scientific outlets and extract core information of each paper. This extracted information should be stored in a database which should allow for regular updates with new publications.

The student will have the opportunity to work with Generative AI tools and reinforce their skills in web scraping, data extraction, and LLM prompting.

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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 at our Professorship

Open dialogue and support

Access to prime capital markets databases if necessary (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

Breitung, C., & Müller, S. (2024). Global Business Networks. *Forthcoming in The Journal of Financial Economics*.

Jacobs, H., & Müller, S. (2020). Anomalies across the globe: Once public, no longer existent?. *Journal of Financial Economics*, *135*(1), 213-230.

Kim, A., Muhn, M., & Nikolaev, V. (2024). Financial statement analysis with large language models. *arXiv preprint arXiv:2407.17866*.