様　式　Ｃ－１９、Ｆ－１９－１、Ｚ－１９　（共通）

科学研究費助成事業　　研究成果報告書

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研究課題名（和文）Econometric methods for high frequency data

研究課題名（英文）Econometric methods for high frequency data

研究代表者
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交付決定額（研究期間全体）：（直接経費）　　3,300,000円

研究成果の概要（和文）：The research went well overall. All of the results obtained during the previous years have been presented in seminars, conferences and discussed with leading experts in the fields.

研究成果の学術的意義や社会的意義
High frequency financial econometrics is very useful for making predictions about the stock market, and also more generally to understand key macroeconomic ariables related to a specific country, such as inflation rate in Japan.

研究成果の概要（英文）：The research went well overall. All of the results obtained during the previous years have been presented in seminars, conferences and discussed with leading experts in the fields. We had a good feedback about our research, and some drawbacks in our approach to consider to improve the future of research.

研究分野：financial econometrics

キーワード：financial econometrics

１．研究開始当初の背景

The use of high frequency financial data to deduct the latent characteristics of stock prices based on high frequency observations has been at the core of an intense research over the last decades. The field typically covers theoretical and empirical questions.

２．研究の目的

I aim to increase our knowledge of high frequency data. The primary field of application lies in understanding financial markets, although some applications are also possible in some related field such as macroeconomics. To achieve this goal, I propose to develop a general and complete theory to bridge the gap between high frequency noisy data and traditional low frequency stock price models and to apply it on empirical data by identifying the sources of the so-called market microstructure noise, to disentangle the activity of human traders and high frequency traders, and finally to investigate the problem of error in observation times.

３．研究の方法

Regarding the research methods, I have regular Skype meetings with my overseas research collaborators Professor Per Mykland and Professor Vladimir Volkov, and I also consult in Japan Professor Nakahiro Yoshida, Professor Takaki Hayashi and Professor Tomoyoshi Yabu. I am meeting twice a week my other collaborator Professor Simon Client.

４．研究成果

The research went well overall. With my coworker Per Mykland, we were able to finalize the project on local estimation. The paper is now published in Journal of Business and Economic Statistics. With my coworker Simon Client, we also finished our work related to explaining the market microstructure noise from an econometrics view-point. We were able to publish two new related papers about this project, one in Journal of Business and Economic Statistics and another one in Annals of the Institute of Statistical Mathematics. Finally, we have also completed our project on cointegration with high frequency data, with the publication of a paper in Electronic

Journal of Statistics. All of these results have also been presented in seminars, conferences and discussed with leading experts in the field.

５．主な発表論文等

〔雑誌論文〕　計0件

〔学会発表〕　計6件（うち招待講演　1件／うち国際学会　3件）

１．発表者名 Potiron Yoann
２．発表標題 Existence in the inverse Shiryaev problem
３．学会等名 The 5th International Conference on Econometrics and Statistics (EcoSta 2022)（国際学会）
４．発表年 2022年～2023年

１．発表者名 Potiron Yoann
２．発表標題 A tale of two time scales: applications in nonparametric Hawkes processes with Ito semimartingale baseline
３．学会等名 Statistical Methods in Finance 2022（招待講演）
４．発表年 2022年～2023年

１．発表者名 Potiron Yoann
２．発表標題 A tale of two time scales: applications in nonparametric Hawkes processes with Ito semimartingale baseline
３．学会等名 Laboratoire Manceau de Mathematiques Le Mans University seminar
４．発表年 2022年～2023年

１．発表者名 Potiron Yoann
２．発表標題 A tale of two time scales: applications in nonparametric Hawkes processes with Ito semimartingale baseline
３．学会等名 Capital Fund Management Paris seminar
４．発表年 2022年～2023年

１．発表者名 Potiron Yoann
２．発表標題 A tale of two time scales: applications in nonparametric Hawkes processes with Ito semimartingale baseline
３．学会等名 33rd (EC)^2 Conference, Econometrics of High Frequency Data & Factor Models（国際学会）
４．発表年 2022年～2023年

１．発表者名 Potiron Yoann
２．発表標題 A tale of two time scales: applications in nonparametric Hawkes processes with Ito semimartingale baseline
３．学会等名 The 15th International Conference of the ERCIM WG on CFE and Computational and Methodological Statistics (CFE-CMStatistics 2022)（国際学会）
４．発表年 2022年～2023年

〔図書〕　計0件

〔産業財産権〕

〔その他〕

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６．研究組織

	氏名 （ローマ字氏名） （研究者番号）	所属研究機関・部局・職 （機関番号）	備考

７．科研費を使用して開催した国際研究集会

〔国際研究集会〕　計0件

８．本研究に関連して実施した国際共同研究の実施状況

共同研究相手国	相手方研究機関