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Editorial

Realized Volatility

The study of high-frequency financial data has been one of the most rapidly evolving areas of research over the last decade. We have seen an explosive growth in the availability of such data, which has gone hand in hand with the development of theory for how to analyze the data. Realized Volatility is emblematic of this development, in that it was the earliest estimator which took advantage of the data in a non-parametric fashion. As both the data and the theoretical insights have grown, it has been possible to ask more complex questions of the data, to the point where “Realized Volatility” is now as much the name of a paradigm as the name of an estimator.

The wide variety of topics is reflected in the articles in this volume. Further estimators of quadratic variation are introduced, multivariate situations are considered, as are jumps, microstructure, asynchronicity, and causality effects. Among the applications are several forms of forecasting, and the relationship between high-frequency estimates and measurements based on financial derivatives. Methodology is developed for improving on asymptotic approximation. For many of the questions asked, there is more than one paper on the subject, showing several ways in which the same problem can be handled.

This volume, as well as the field of research, also represents a coming together of areas that have traditionally been separate, ranging from econometrics and statistics to empirical finance, mathematical finance, and to computer-intensive finance. The ability of high-frequency data to help unify the field of finance in its many forms is a meta-level side effect of this research, of which we are presumably only seeing the beginning. To a great extent, this is happening because the new econometric paradigm permits statistical inference about the same quantities that have previously been studied theoretically by other branches of finance. The power to measure from high-frequency data also creates greater transparency, both of markets and of theoretical constructions.

The recent financial crisis has underlined the need both for such transparency, and for finance to be understood in an integrated way. Hence, the study of high-frequency financial data is not only an intellectual innovation, but also an endeavour of the greatest social importance.

Finally, high-frequency data are not only a phenomenon in finance, but also in neural science, turbulence and even in Greenlandic ice cores.

Most of the papers appearing in this volume were presented at the CIRANO/CIREQ conference on “Realized Volatility”, April 2006, organized by Nour Meddahi. The program committee consisted of Torben Andersen, Tim Bollerslev, Ronald Gallant, René Garcia, Nour Meddahi, Per Mykland, Neil Shephard, and George Tauchen. For financial support, we thank the main sponsors CIRANO and CIREQ, as well as the Bank of Canada and Hydro Quebec (Chairs held by René Garcia), Canada Research Chairs (chairs held by Russell Davidson and Jean-Marie Dufour), the Department of Economics of the Université de Montréal, and the Journal of Applied Econometrics. We also thank CIREQ’s staff for helping us organize the conference. We thank the referees for their invaluable help in improving the quality of the submitted manuscripts. We would also like to thank Ron Gallant and George Tauchen for invaluable help and guidance in putting this Annals issue together.

At this point, as Gussie Fink-Nottle would suggest, on this auspicious occasion, we shall not detain you any longer.

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