Foreword

A defining characteristic of econometrics in the first two decades of the 21st century is the growth and importance of financial econometrics. The subject was born in the 1980s as a field of time series econometrics concerned with modeling volatility, a prominent feature of financial assets that is amenable to estimation and inference conditional on past history. As such it is interdisciplinary, bringing together finance and econometrics in productive ways that guide theory, reveal empirical regularities, and enhance industry practice. During the 1990s with the development of global internet connectivity and the emergence of high frequency high dimensional market observations, the possibility of utilizing vast amounts of financial data became apparent. Important linkages were forged with earlier research on continuous time econometrics and ongoing probabilistic research in the stochastic process modeling of quadratic variation and higher order quantities such as quarticity. Amidst these technical developments and a thundering avalanche of data driving the discipline, the shape of modern financial econometrics began to emerge and led with surprising rapidity to a discipline and profession supported by its own society and journals.

Concomitant with these developments and motivated by the opportunity that a young university has to invest in human capital, the School of Economics at Singapore Management University took the bold step of building an econometrics unit within its expanding economics faculty to face the challenges of this emergent discipline. In this mission SMU was supported by successive Deans, Provosts and Presidents, making several key appointments that proved capable of the task. One of these appointments was Jun Yu, a young Associate Professor recruited in 2004 from the University of Auckland. In 2008 a Ph.D program was established based on the North American model of advanced coursework complemented by a substantial dissertation. At the same time, the Sim Kee Boon Institute for Financial Economics was founded with a Centre of Financial Econometrics for which Jun served as the deputy director, later assuming the role of full director of the Institute itself for a 3 year term. In the following years, the faculty grew steadily with increasing breadth and depth in econometrics; and the Ph.D program blossomed, producing at the time of writing over 75 Ph.D graduates, some 32 of whom are in econometrics with a goodly fraction in financial econometrics.

Jun Yu has been a central figure in all of these developments. In supervision, he has chaired or co-chaired the dissertations of around one half of the Ph.D students; in research he has written over 80 published articles in finance and econometrics, many in leading journals and many with his students, former students, and colleagues; as an instructor and workshop leader he is deeply valued by all his students; and in teaching, research, supervision and administration he has played a major role in helping guide the Ph.D program to become a leading cradle of econometrics training in the entire Asia-Pacific region. Within a period of some 15 years this is a major accomplishment.

The present volume is a contribution to modern financial econometrics written in honour of Professor Jun Yu on the occasion of his 50th birthday by his colleagues and former students. The book is an extended overview of econometric theory and empirical applications intended for advanced students and researchers in financial econometrics. The volume has eleven chapters separated into three Parts according to content. Part I deals with major issues concerned primarily with low-frequency phenomena that are prominent in long historical financial data. The chapters

in Part II address various topics in high frequency financial econometrics with continuous time models and discretized data. Part III is concerned with the estimation of stochastic volatility models, hypothesis testing, and model selection based on Bayesian posterior analysis. All topics covered in the volume are at the forefront of research in the field of financial econometrics. The individual chapters are written with a level of exposition designed to enhance readability, making it particularly suitable for a graduate advanced course or a supplementary text or reference work.

Since the turn of the millenium, financial econometrics has embarked on a striking individual journey with methodologies drawn and developed from multiple disciplines that include stochastic process probability, high dimensional statistical analysis, and advanced time series econometrics. This eclectic approach has opened many doors to understanding the complexities of the modern world of financial, commodity, and real estate markets. The editors and contributors join me in hoping that this volume will assist graduate students and researchers of financial econometrics in their own scholarly journeys within this exciting field. As such it belongs to the tradition of graduate training in econometrics that is now well established at Singapore Management University.

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