

***REDUCING THE ESTIMATION ERROR IN FINANCE: A TIME VARYING
PROBABILITY DENSITY FUNCTION APPROACH***

***TSZ KEI WONG, PETER VERHOEVEN AND JANICE HOW
School of Economic and Finance,
Curtin University of Technology, Bentley, WA 6102.***

The research is concerned with estimation errors in financial modelling. Although autoregressive conditional heteroscedasticity (ARCH) models dramatically improve the efficiency of forecasting the volatility, the ARCH-type estimators are substantially biased when outliers frequently occur in the financial series. Modelling for the conditional higher moment plays a vital role in reducing such estimation error. Moreover, there is a great deal of measurement errors from diagnostic tests, even though heteroscedasticity in the second moments have been removed. Hence, heteroscedasticity exists not only in the second moment, but also appears in the higher and/or non-integer moments. The research proposes several conditional higher and non-integer moment models in an attempt to reduce estimation error in financial series.