**Chapter 15 Summary**

A distinguishing feature of financial time series such as stock prices, inflation rates, and exchange rates is that they often exhibit volatility clustering – that is, periods in which their prices or the return on them show wide swings for extended time periods and periods over which there is relative calm. This results in correlation in error variance over time. To take into account such correlation, financial econometricians have developed several models, beginning with ARCH (autoregressive conditional heteroscedasticity). With daily data on the dollar/euro exchange rate over an extended time period, we showed how the ARCH model takes into account volatility in asset prices and asset returns.

Later incarnations of the ARCH model include GARCH, GARCH-M (GARCH in mean), TGARCH (threshold GARCH), and EGARCH (exponential GARCH), each introducing more versatility (and complexity) in the estimation of volatility. Fortunately, software packages exist which can estimate these models with comparative ease.

Apart from the technical aspect of volatility, the topic is of practical interest to investors at all levels, for an investor is not only interested in obtaining a higher rate of return, but also a steady (i.e. less volatile) rate of return.