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Problem 10.22 (Estimate only the GARCH(1,1) model and interpret your results)
10.22 Estimate parameters for the EWMA and GARCH(1,1) model on the euro- USD exchange rate data between July 27, 2005, and July 27, 2010. This data can be found on the author's website:
www-2.rotman.utoronto.ca/~hull/data

10.19 Suppose that the price of an asset at close of trading yesterday was \$300 and its volatility was estimated as 1.3% per day. The price at the close of trading today is \$298. Update the volatility estimate using
(a) The EWMA model with $\lambda = 0.94$
(b) The GARCH(1,1) model with $\omega = 0.000002$, $\alpha = 0.04$, and $\beta = 0.94$.

13.12 Suppose that a one-day 97.5% VaR is estimated as \$13 million from 2,000 observations. The one-day changes are approximately normal with mean zero and standard deviation \$6 million. Estimate a 99% con dence interval for the VaR estimate.

19.23 Suppose that a three-year corporate bond provides a coupon of 7% per year payable semiannually and has a yield of 5% (expressed with semiannual compounding). The yields for all maturities on risk-free bonds is 4% per annum (expressed with semiannual compounding). Assume that defaults can take place every six months (immediately before a coupon payment) and the recovery rate is 45%. Estimate the default probabilities assuming (a) the unconditional default probabilities are the same on each possible default date and (b) the default probabilities conditional on no earlier default are the same on each possible default date.

23.13 Consider the following two events: (a) A bank loses \$1 billion from an unexpected lawsuit relating to its transactions with a counterparty and (b) an insurance company loses \$1 billion because of an unexpected hurricane in Texas. Suppose that you have the same investment in shares issued by both the bank and the insurance company. Which loss are you more concerned about? Why?

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