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## Assignment 5

**Due: 20/11/2018**

The following GARCH model:

Mean Equation: 
$$rfuture_t = \alpha + \beta rspot_t + \varepsilon_t \quad (1)$$

Variance Equation: 
$$\sigma_t^2 = \alpha_0 + \sum_{j=1}^p \delta_j \sigma_{t-j}^2 + \sum_{i=1}^q \alpha_i \varepsilon_{t-i}^2 \quad (2)$$

From the data set assign04.dta:

### Requirements:

1. Test whether there exists significant ARCH effects.
2. Estimate GARCH(p,q) for spot return (*rspot*) using future return (*rfuture*) as explanatory variable for mean equation – determine the most appropriated order p and q for variance equation using SBIC given the maximum lag equals to 2.
3. From (2), predict the variance of future return (*rfuture*).