Financial Econometrics I

Problem Set 5: ARCH and GARCH Models

December 8, 2018

Learning objectives: After solving the following questions you should be able to

(a) Understand the necessity of introducing heteroskedastic volatility to time series models.

(b) Know the specification and main properties of ARCH/GARCH models.

(c) Know how to fit GARCH models, interpret estimation results, conduct basic model diagnostics and hypothesis tests, and forecast conditional volatility.

1. **FY Exercise 3.1**

2. **FY Exercise 3.2**

3. **FY Exercise 3.4**

4. **FY Exercise 3.5**

5. **FY Exercise 3.8**

6. **FY Exercise 3.9 (Empirical Exercise)**

   Part (e) is optional. To learn how to use the Delta method, read Section 2.5.2.