**Web page for "An Introduction to Analysis of Financial Data with R" by Ruey S. Tsay**

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This web contains the data sets, R packages, R scripts, and R commands used in the text.

All analyses in the text were carried out with [R](http://www.r-project.org/).

[Errata](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/errata.pdf) of the text.

Solutions to exercises are available for instructors who adopt the book as a textbook. Please send your request to   
Ms Kathleen Pagliaro of   
Wiley at kpagliaro@wiley.com via email or regular mail at  
Ms Kathleen Pagliaro  
Mail Stop 8-02  
John Wiley and Sons, Inc.  
111 River Street  
Hoboken, NJ 07030, U.S.A.

#### Analysis of Global Temperature: [ch3case2.pdf](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch3case2.pdf) ######

The solutions are not for distribution and should not be given to any third part without permission from the author and Wiely.

**Chapter 1: Financial Data and Their Properties**

Data sets used (including exercises): [ch1data.zip](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch1data.zip) (file names are given in the text)

R packages used: quantmod, fBasics, mnormt

R scripts used: [ohlc.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ohlc.R), [ma.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ma.R)

Data sets for exercises: (1) [d-axp3dx-0111.tx](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/d-axp3dx-0111.txt)t, (2) [m-ge3dx-4011.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/m-ge3dx-4011.txt), (5) [d-fx-ukus-0711.tx](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/d-fx-ukus-0711.txt)t and [d-fx-usjp-0711.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/d-fx-usjp-0711.txt)

R commands used in the chapter: [ch1Rscripts.tx](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch1Rscripts.txt)t

**Chapter 2: Linear Models for Financial Time Series**

Data sets used (including exercises): [ch2data.zip](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch2data.zip)

R packages used: quantmod, fUnitRoots, TSA, fracdiff

R scripts used: [backtest.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/backtest.R), [foreplot.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/foreplot.R)

Data sets for exercises: (1) [m-unrate-4811.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/m-unrate-4811.txt), (2) [m-dec125910-6111.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/m-dec125910-6111.txt), (4) [m-aaa-1911.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/m-aaa-1911.txt) and [m-baa-1911.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/m-baa-1911.txt), (7) [q-jnj-earns-9211.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/q-jnj-earns-9211.txt), (8) [q-GNPC96.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/q-GNPC96.txt)

R commands used in Chapter 2: [ch2Rscripts.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch2Rscripts.txt)

**Chapter 3: Case Studies of Linear Time Series**

Data sets used (including exercises): [ch3data.zip](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch3data.zip)

R script used: backtest.R (see Chapter 2)

Data sets for exercises: (1) [m-CAUS-7611.tx](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/m-CAUS-7611.txt)t, (2) [m-morgfed-7111.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/m-morgfed-7111.txt)

R commands used in Chapter 3:[ch3Rscripts.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch3Rscripts.txt)

**Chapter 4: Asset Volatility and Volatility Models**

Data sets used (including exercises): [ch4data.zip](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch4data.zip)

R package used: fGarch

R scripts used: [archTest.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/archTest.R), [Igarch.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/Igarch.R), [garchM.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/garchM.R), [Egarch.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/Egarch.R), [Ngarch.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/Ngarch.R), [Tgarch11.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/Tgarch11.R), and [vold2m.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/vold2M.R)

Data sets for exercised: (1) [d-spy-0111.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/d-spy-0111.txt), (3) [m-ko-6111.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/m-ko-6111.txt), (5) [d-pg-0111.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/d-pg-0111.txt)

R commands used in Chapter 4: [ch4Rscripts.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch4Rscripts.txt)

**Chapter 5: Applications of Volatility Models**

Data sets used (including exercises): [ch5data.zip](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch5data.zip)

R package used: fGarch

R scripts used: [EWMAvol.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/EWMAvol.R), [GMVP.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/GMVP.R), backtest.R (see chapter 2), [backtestGarch.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/backtestGarch.R)

Data sets for exercises: (1) [w-petroprice.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/w-petroprice.txt), (2) [d-a2a-0110.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/d-a2a-0110.txt), (3) [d-abtsp-0110.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/d-abtsp-0110.txt). For problems (4) and (5), see (2).

R commands used in Chapter 5: [ch5Rscripts.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch5Rscripts.txt)

**Chapter 6: High Frequency Financial Data**

Data sets used (including exercises): [ch6data.zip](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch6data.zip)

R packages used: fGarcg, MASS

R scripts used: [acd.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/acd.R), [hfanal.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/hfanal.R), [hf2ts.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/hf2ts.R), [hfchg.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/hfchg.R), [GeoSize.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/GeoSize.R)

Data sets for exercises: (3) [taq-aa-t-june72010.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/taq-aa-t-june72010.txt), (5)[taq-aa-t-june82010.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/taq-aa-t-june82010.txt), (6) [taq-aa-t-june7t112010.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/taq-aa-t-june7t112010.txt), (7) [taq-sbux-jul2011.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/taq-sbux-jul2011.txt)

R commands used in Chapter 6: [ch6Rscripts.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch6Rscripts.txt)

**Chapter 7: Value at Risk**

Data sets used (including erercises): [ch7data.zip](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch7data.zip)

R packages used: fGarch, evir, quantreg

R scripts used: [SimGarcht.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/SimGarcht.R), [Hill.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/Hill.R)

Data sets for exercises: (1)-(5) [d-aapl-0111.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/d-aapl-0111.txt), (6) [d-aaplbnd-0111.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/d-aaplbnd-0111.txt)

Some R scripts used in exercises: [RMfit.R](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/RMfit.R), [RMeasure](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/RMeasure.R), [evtVaR](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/evtVaR.R),[RMeasure.sim](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/RMeasure.sim.R)

R commands used in Chapter 7: [ch7Rscripts.txt](https://faculty.chicagobooth.edu/ruey.tsay/teaching/introTS/ch7Rscripts.txt)