# FINANCIAL MODELING USING R

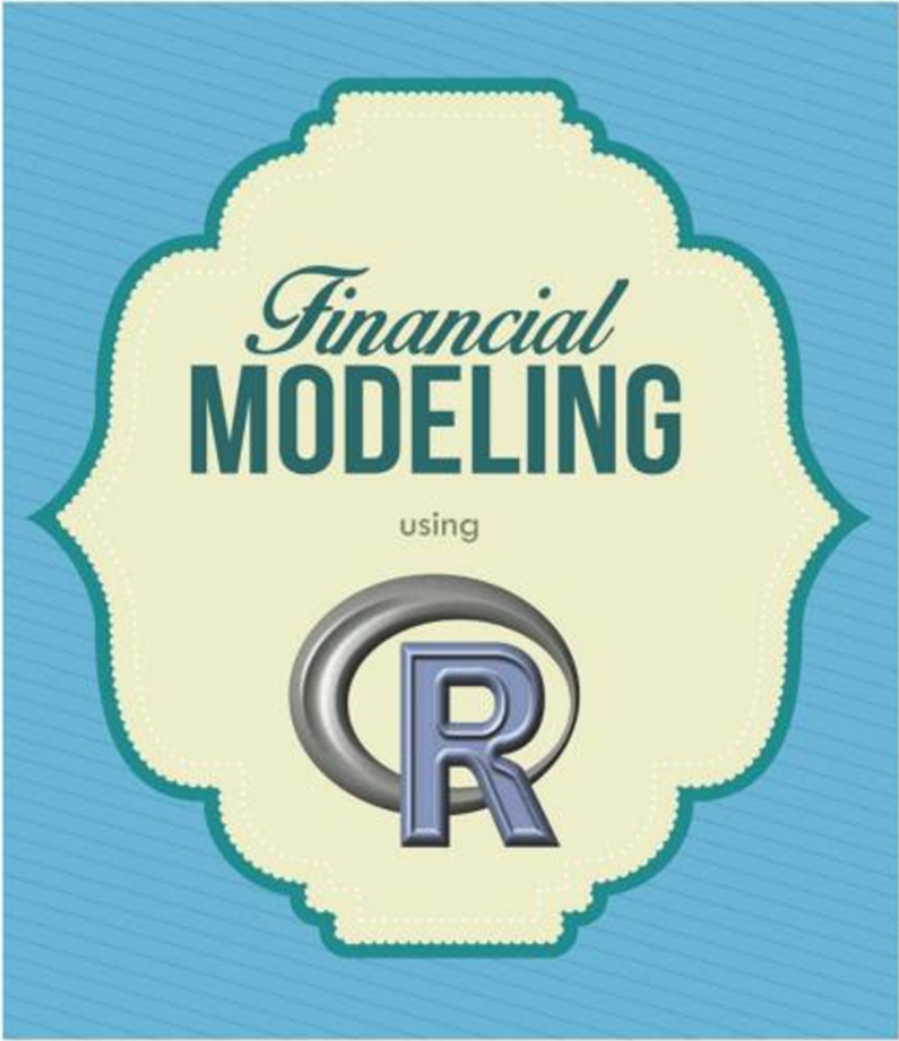--------------------------------

This is a programming book written by a finance professor. This book will be an ideal textbook for many quantitative finance courses, such as (next generation) financial modeling, portfolio theory, empirical research in finance, computational finance, and risk management. The book has three unique characteristics: (1) use free software; (2) combine programming with various finance theories, such as ratio analysis, CAPM, Fama-French 5-factor model, portfolio theory, options and futures, credit analysis, VaR (Value at Risk), and Monte Carlo Simulation; and (3) download and process publicly available financial and economic data from various sources, such as Yahoo!Finance, Google Finance, FRED (Federal Reserve Bank's Economic Data Library), SEC, and Prof. French's Data Library.

Since graduated from McGill with a Ph.D. in finance, Dr. Yuxing Yan has been teaching various finance courses at 8 universities (2 in Canada, 1 in Singapore and 5 in the US). He has 23 publications including papers published in Journal of Accounting and Finance, Journal of Banking and Finance, Journal of Empirical Finance, Real Estate Review, Pacific Basin Finance Journal, Applied Financial Economics and Annals of Operations Research. He is good at several computer languages such as R, Python, SAS, Matlab and C. From 2003 to 2010, he worked at Wharton School as a consultant helping researchers with their programs and data issues. He has published 5 books: Python for Finance (2014), Python for Finance (both Chinese and Korean translations, 2017), Python for Finance (2nd ed., 2017), Financial Modeling using R (2016) and Financial Databases (2008, with S.W. Zhu, in Chinese).

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BOOKS

FINANCIAL MODELING USING R

YUXING YAN

**Financial**
**MODELING**
using
**R**

```
> as.integer(runif(800,0,2))
  [1] 0 0 1 0 1 0 1 0 0 1 0 1
 [13] 0 1 0 0 0 0 0 0 0 0 0 1
 [25] 0 1 0 1 0 0 1 1 0 0 0 1
 [37] 0 0 0 1 1 1 0 0 0 1 1 1
 [49] 1 1 1 0 0 1 1 0 1 1 1 1
 [61] 1 0 1 0 0 1 0 0 1 1 1 1
 [73] 1 1 1 0 0 0 0 1 0 1 1 0
 [85] 1 0 1 1 0 1 0 0 0 0 1 1
 [97] 1 0 0 1 1 0 1 0 1 0 1 1
[109] 1 1 1 1 1 0 1 1 0 0 0 1
[121] 0 0 1 0 0 1 1 1 0 0 0 1
[133] 0 1 1 0 0 1 1 1 1 1 1 1
[145] 0 1 1 0 1 0 0 1 0 0 1 0
[157] 0 1 1 1 0 1 1 1 0 1 0 0 1
[169] 0 0 1 0 0 1 1 0 0 1 0 0
[181] 1 1 1 0 1 0 0 1 0 0 0 1
[193] 0 1 1 0 1 0 0 1 0 0 1 1
[205] 1 0 1 1 0 0 0 0 1 1 0
[217] 0 1 1 1 0 1 1 1 1 1 1 1
[229] 0 0 0 0 0 0 1 1 1 0 0 0
[241] 0 1 1 0 0 0 1 0 0 1 0 0
[253] 1 1 0 0 1 0 0 0 1 0 0 0
[265] 0 0 1 1 1 1 0 0 0 1 1
[277] 0 0 0 0 0 1 1 1 1 0 0 0
[289] 1 1 1 0 1 1 0 1 0 1 1 0
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[313] 0 1 0 1 0 1 1 1 0 1 1 0
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[373] 1 1 1 1 1 1 1 1 1 0 1 1
[335] 1 1 1 0 1 0 1 0 1 0 0 1
[397] 1 1 0 1 1 0 1 0 1 1 0
[409] 1 1 1 0 0 0 1 0 0 1 1 0
[421] 1 1 1 1 0 1 0 1 0 0 0 1
[433] 0 1 0 0 0 0 1 1 0 1 1 1
[445] 0 0 0 1 0 0 0 0 1 0 0
[457] 1 1 0 1 0 0 1 0 1 0 1 1
[469] 1 1 1 0 1 1 0 0 0 0 1 1
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[517] 0 1 1 0 1 0 1 1 1 1 0 1
[529] 1 0 0 0 1 1 1 0 1 0 0 1
[541] 1 1 1 1 0 0 0 0 0 1 1 1
[553] 0 0 1 0 0 1 0 1 0 0 1 0
[565] 0 0 0 1 0 0 0 0 1 1 0 1
[577] 0 1 0 0 0 0 0 1 1 0 0 1
[589] 1 1 1 0 1 1 1 0 0 1 1 0
[601] 1 1 1 1 1 0 1 0 0 0 0 0
[613] 0 0 0 0 0 1 0 1 1 0 1 0
[625] 0 0 0 1 1 0 0 1 1 0 0
[637] 1 1 1 0 1 0 1 0 1 0 1 0
[649] 1 1 0 0 0 1 0 1 0 1 1 0
[661] 1 1 0 1 1 0 0 1 0 1 0 0
[673] 0 1 0 0 0 1 1 0 0 0 0 0
[685] 0 1 1 1 0 0 0 0 1 0 0 0
[697] 0 1 1 1 1 0 0 0 0 0 0 0
```

```
>x<-c(25,21,24,9,14,7)
>firstN<-
paste(LETTERS[x],collapse=''
>y<-c(25,1,14)
>lastN<-paste(LETTERS[y],collapse=''
>paste(firstN,lastN)
[1] "YUXING YAN"
```