Roadmap

HCC

2023-04-18

Contents

Market How-To

- Maintain the daily market watch
- Set up the R backend

Reading List

Trading

- Iqbal - Volatility; Practical Options Theory
- Iqbal - Foreign Exchange; Practical Asset Pricing and Macroeconomic Theory
- Interest Rate Markets; A Practical Approach to Fixed Income
- Fixed Income Securities; Tools for Today's Markets

Q-Fin

- Lehalle, Laruelle - Market Microstructure in Practice, Second Edition
- Jacob - Stochastic Processes for Physicists; Understanding Noisy Systems (2010)
- Gueant - The Financial Mathematics of Market Liquidity; From Optimal Execution to Market Making (2016)
- Bouchaud - Theory of financial risk and derivative pricing; From statistical physics to risk management
- Bouchaud - Trades, Quotes and Prices; Financial Markets Under the Microscope
- Spadafora - Theoretical Foundations Quantitative Finance (All the Financial Math You Need to Survive)

Estimation

- Doerfler, Dead Reckoning
- Migdal
- Wells: Effective Theories in Physics

Bayesian

- Barreda and Silbert, Bayesian Multilevel Models for Repeated Measures Data
- McElreath, Statistical rethinking
- Bayesian Essentials with R, Second Edition

Physics

- Becker-Becker-Schwarz

- CFT for hep-ph
- Hollowood: Renormalization Group and Fixed Points in QFT

Math

- Lenister's Basic Category Theory

Fun

- A Short Journey from Quarks to the Universe

Archive

[q-fin.TR]

- 2023, A Bayesian derivation of the square root law of market impact
  - Hiroki 2020 A Brief Introductory Review of Information Thermodynamic
- 2023, A time-dependent Markovian model of a limit order book
- 2023, Direct quantitative evidence of the order-splitting hypothesis as the microscopic origin of long-range correlations in market order flow

[Alpeh]

- 2021, Todorov, "Passive Funds Affect Prices: Evidence from the Most ETF-dominated Asset Classes"
- 2023, Unifying Market Microstructure and Dynamic Asset Pricing
- 2023, Why Topological Data Analysis Detects Financial Bubbles?

R Learning

Must-Read

- Modern R with the tidyverse
- R for Data Science
- R Cookbook 2ed
- R for Everyone: Advanced Analytics and Graphics, 2nd Edition

Self-Study

- tidyquant
  - Intro
- R Packages (2e)
- blottb7/tick-data/

Ref

R Markdown

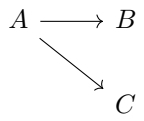
- R Markdown: The Definitive Guide
- https://nceas.github.io/training-rmarkdown-website/tutorial.html
- https://rstudio4edu.github.io/rstudio4edu-book/rmd-dress.html
- https://p8105.com/making_websites.html
- https://github.com/yihui/knitr-examples

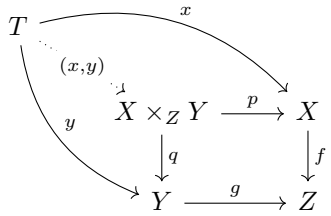
Diagrams

- DAG, DiagrammeR etc
- Tikz vs Rmd

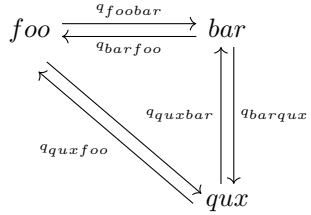
TikZ-cd

- https://ctan.org/pkg/tikz-cd?lang=en
- [UI] TikZ-cd editor
- [pdf] Commutative diagrams with TikZ



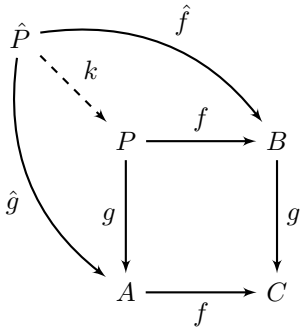


- https://blogs.fu-berlin.de/gruenstaeudl/blog/page/7/

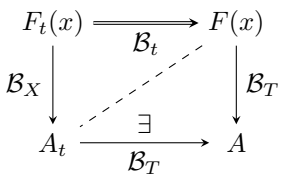


TikZ per se

- https://en.wikibooks.org/wiki/LaTeX/PGF/TikZ
- https://github.com/yihui/knitr-examples/blob/master/058-engine-tikz.Rmd



- https://texample.net/tikz/examples/commutative-diagram-tikz/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