

Math: From An Economist's Perspective

For Personal Reference, happy to circulate

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Check the [Github Page](#) for this project, or [email me](#)!

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HERE WE GO!

Math is fascinating, certainly. It is clean, organized, beautiful, philosophical, but it is also hard to grasp. I started this project for one simple purpose: As an Economic Ph.D. student, math was not my strongest suit and I NEED to change that. Hence, this math-learning notebook will be tailored according to the need of an economist, instead of being, you know, math math.

Here, I cover the math knowledge ranging from basic concepts, to fundamental theories including linear algebra and real analysis, and more integrated topics including optimization, dynamic methods, etc. There are several reference

Since this review is tailored according to my own research interest and experience, I will not only summarize the theoretical perspectives of the studies, present their findings and discuss how they fit into the literature, but document my replication attempts and pseudo codes as well. All the codes related to this review can be found on [my Github page](#).

I thank Dr. Svetlana Bryzgalova for her valuable intuitions and impressive knowledge of the empirical finance literature. Building this review is truly a memorable journey for me. I would love to share this review and all the related materials to anyone that finds them useful. And unavoidably, I would make some typos and other minor mistakes (hopefully not big ones). So I'd really appreciate any correction. If you find any mistakes, please either set up a branch on Github or send the mistakes to this email address saizhang.econ@gmail.com, BIG thanks in advance!

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CHAPTER 1

LINEAR ALGEBRA

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Every investor knows that trading in financial markets is to play games with time itself. Daily trades determine asset prices at every date and hence influence the random distribution of future prices as well as the initial level of pri

1.1 Chap1Sec1

In this section, I

1.2 Chap1Sec2

In this section, I

CHAPTER 2

REAL ANALYSIS

CHAPTER 3

OPTIMIZATION

CHAPTER 4

DYNAMIC METHOD