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Computational Investing, Part I

153: The Fundamental Law: Buffet, Cohen & Coin flipping

Find out how modern electronic markets work, why stock prices change in the ways they do, and how computation can help our understanding of them. Learn to build algorithms and visualizations to inform investing practice.

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Another Quote

“We believe that according the name 'investors' to institutions that trade actively is like calling someone who repeatedly engages in one-night stands a 'romantic.’”

– Warren Buffet

Observation

- Jim Simons (rentec) and Warren Buffet offer about the same performance.
- Buffet's portfolio contains few equities:
  - 54% in just 3 stocks (2010)
- Simons trades actively:
  - Perhaps 100Ks per day.

Question:

- Can a single theory relate the performance of these two titans?
- Yes, the “Fundamental Law of Active Portfolio Management”

The Fundamental Law

$$IR = IC \cdot \sqrt{BR}$$

Let's Solve for Buffet's Skill

- Suppose Reward/Risk = 3.0

- IR = IC * SQRT(trades)
- 3.0 = skill * SQRT(120)
- skill = 0.27

Note: I am making up these numbers just for example!

Suppose RenTec Has 1/100th the Skill

- RenTec skill = 0.27/100 = 0.0027
- How many trades to achieve 3.0 Reward/Risk?

- IR = IC * SQRT(trades)
- 3.0 = 0.0027 * SQRT(trades)
- trades = 1,234,567
  - 10,000 times more trades than Buffet

Note: I am making up these numbers just for example!

Take Home Lessons

- Buffet = great skill, few trades
- RenTec = less skill, many opportunities
- Two ways to succeed:
  - Skill
  - Breadth