



University of Zurich
Institute for Empirical Research in Economics



Advanced Portfolio Theory

NHH-Bergen

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- 1991 Ph.D. University of Bonn and Paris
- 1993 Assistant Professor Stanford University
- 1996 Professor for Economics at Bielefeld
- Since 1999 Professor for Finance at Zürich
- Since 2001 Adjunct Professor NHH-Bergen



Possible Improvements

- Less is better than more

- Whole worlds

- Graham Dodds
- Markowitz
- BPT
- Evol PT

Kostolyani 20 years and Benartzi Thaler myopic loss aversion

BTP doubling down (durchschnittlicher Einstandspreis senken)

BPT window dressing

Fix mix = buy and hold absolute vs relative returns



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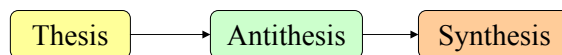


1. Introduction

- Evolution of Portfolio Theory
- Rational Behavior Facing Stochastic Processes:
The Case of Weather
- Reflexivity and Guessing Game
- Events Driving the Stock Market
- Anticipation Principle



Evolution of Portfolio Theory



Classical Portfolio Theory:

50ties Mean-Variance Principle

60ties *CAPM*

Behavioral Portfolio Theory:

90ties: Prospect Theory and Montreal

Evolutionary Portfolio Theory

2000ties: Market Selection Theory



Main Features of Financial Markets

- Noise
- Anticipation Principle
- Reflexivity
- Beauty Contest
- Minority Game
- (Bounded) Rationality
- Market Selection



Rational Behavior Facing Stochastic Processes: The Case of Weather

Problem: How to dress appropriately?

Strategies: Shorts, T-Shirt, Rain Coat, Pullover, Umbrella, Combinations thereof.

Utility: How we feel when wet, cold, sweaty...

Expectations: Weather Forecast!

Rational Reasoning:

If Sun then Shorts and T-shirt

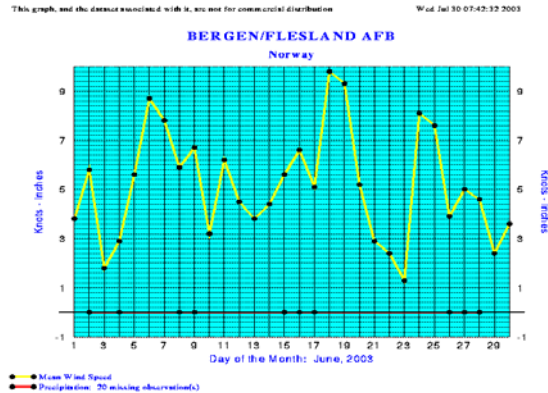
If Rain (**and no wind**) then Umbrella

etc.



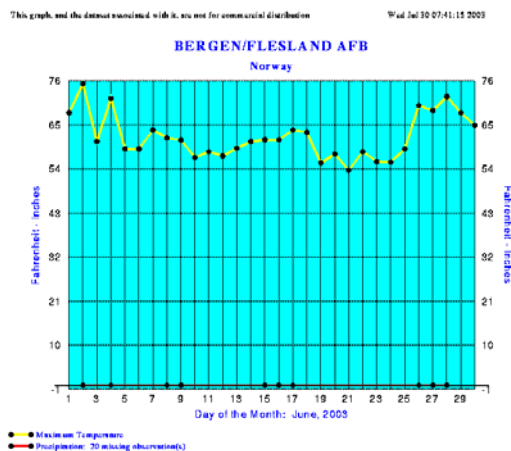
Rational Behavior Facing Stochastic Processes: The Case of Weather

The Stochastic Process of Weather:



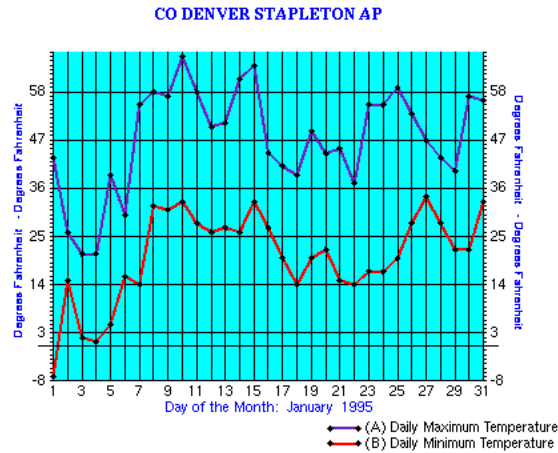
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Rational Behavior Facing Stochastic Processes: The Case of Weather

The Stochastic Process of Weather:



Stock Markets and Weather: What is the Difference?

Strategies on stock market are more complex

Utility is more ambiguous

Expectations are much more noisy

Rational Reasoning is quite rare

People on the street have less experience

Major Difference: The weather does not change when we change our expectations about it. Whereas stock market prices are only determined by our expectations. (Soros: Reflexivity).



Reflexivity (Soros)

„Financial markets attempt to predict a future that is contingent on the decisions people make in the present. Instead of just passively reflecting reality, financial markets are actively creating the reality that they, in turn, reflect. There is a two way connection between present decisions and the future events, which I call reflexivity.“ (page xxiii)

„Reflexivity is absent from natural science, where the connection between scientists‘ explanations and the phenomenon that they are trying to explain runs only one way.“ (page xxiv)



Guessing Game (Keynes)

“Professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view.”
(Keynes, 1964[1936]:General Theory, S. 156)



Guessing Game (A Trader's point of view)

„Ninety percent of what we do is based on perception. It doesn't matter if that perception is right or wrong or real. It only matters that other people in the market believe it.

I may know it's crazy, I may think it's wrong. But I lose my shirt by ignoring it.

This business turns on decisions made in seconds. If you wait a minute to reflect on things, you're lost. I can't afford to be five steps ahead of everybody else in the market. That's suicide.“

“Making Book on the Buck” Wall Street Journal, Sept. 23, 1988, p. 17.



Guessing Game (Soros)

„Each market participant is faced with the task of putting a present value on a future course of events, but that course is contingent on the present values that all market participants taken together attribute to it.“ (page 47)



Guessing Game

The Game:

Participants: This audience.

Rules: Pick a number between 0 and 100 .

Winning number: $2/3$ of the average number.

Example: 5 Participants

Choose: 10, 20, 30, 40, 50.

Average number 30.

Winner: 20.



Name: _____

My Number (between 0 and 100):



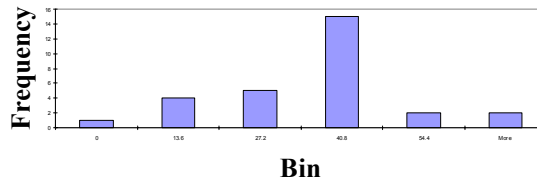
Typical Outcome:

Rational Solution: Everybody chooses 0.

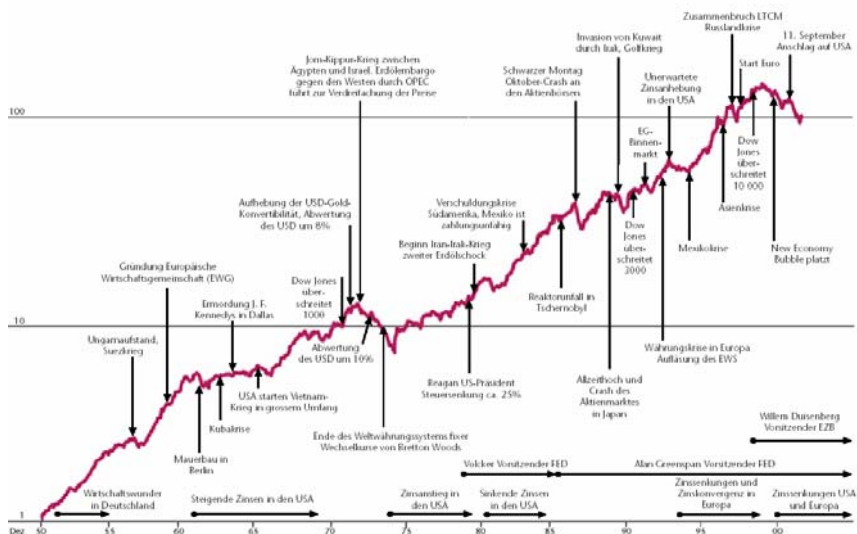
Typical winning number: 17-22.

The winner is who is best in guessing the average irrationality of the market.

So tipten Sie:



Events Driving the Stock Market



Anticipation Principle

On September 30th 2002 Alan Greenspan decreased interest rates from 1.75 to 1.25 basis points but the DJIA dropped from 7701 to 7591.

Possible Explanations: The decrease in interest rates was already **anticipated** by the market.

From September 1990 to September 2002 Alan Greenspan changed interest rates on 46 days. In 27 cases on that day the DJIA moved in the wrong direction!

Hence only in 47% of the cases the market got it right on that day.

Key Question: The stock price of company XY-Limited is 100\$ today.
Did the market get this price right? Or shall I buy or rather (short) sell XY?



Anticipation Principle

„The only price changes that would occur are those that result from new information.

Since there is no reason to expect information to be non-random in appearance, the period-to-period price changes of a stock should be **random movements**, statistically independent of one another.“

Cootner (1964): *The Random character of stock prices*,
MIT-press



Anticipating Take Overs

- Example: Takeover announcement

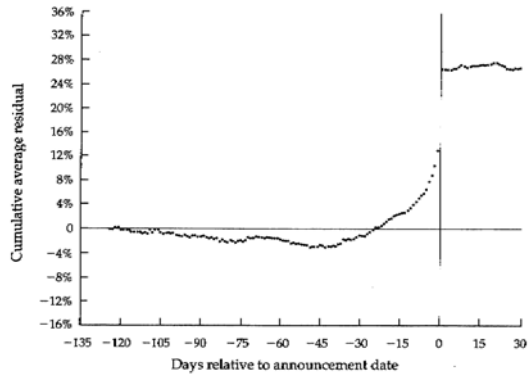


FIG. 1.1 Cumulative abnormal returns to shareholders of takeover attempts around the announcement date.
Source: Keown and Pinkerton (1981).



Prelude

Stock Picking and Diversification

Model 0 and 1 b&h

