

BEHAVIOURAL FINANCE: ITS RELEVANCE FOR SELECTING FUND MANAGERS

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OUTLINE

1 OUTLINE

2 WHAT IS BEHAVIOURAL FINANCE? (BF)

- Market Efficiency and Limits to Arbitrage
- Non Rational Choices
 - Beliefs
 - Heuristics
 - Preferences
- What is Behavioural Finance NOT?

3 HOW CAN BF HELP TO IMPROVE DECISIONS?

- Improving Your Decisions
- How can BF help to create better portfolios?
- Improving Your Trading Skills
- How can BF help to select fund managers?

4 CONCLUSION: THE RELEVANCE OF BEHAVIOURAL FINANCE

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EFFICIENT MARKETS

- Rational Approach: people make decisions
 - according to Expected Utility (EUT) or at least Subjective Expected Utility (Savage 1954)
 - and apply correctly Bayes Law
- Efficient Market Hypothesis (EMH)(Fama 1965) and (Fama 1970)
- Friedman (Friedman 1953): rational traders (arbitrageurs) will fast eliminate non-efficiencies created by irrational traders (noise traders)
- EMH together with EUT is an elegant, appealing and rational framework

ARE MARKETS EFFICIENT?

- However
 - prices are right \implies no free lunch
 - but ...
 - no free lunch \nRightarrow prices are right
- And ...exploiting inefficiencies can be both **risky** and **costly**

MARKET EFFICIENCY

- Behavioural Finance (BF), is the stance where some financial phenomena can be better understood, assuming that some agents are **not** (fully) rational
- Examples of behavioural models:
 - ① Adam Smith's Theory of Moral Sentiments (Smith 1759)
 - ② Keynes's beauty contest (Keynes 1936)
 - ③ Prospect Theory (Kahneman and Tversky 1979)
 - ④ Behavioural Portfolio Theory (Shefrin and Statman 2000)

LONG TERM CAPITAL MANAGEMENT (LTCM)

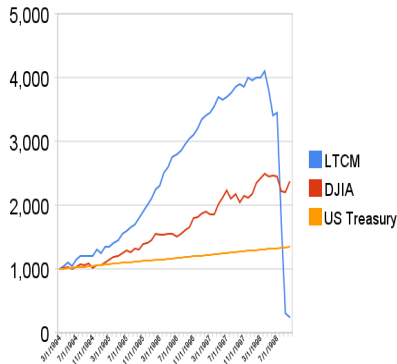
EXAMPLE 1: EXPLOITING INEFFICIENCIES CAN BE RISKY

- LTCM was a well known Hedge Fund with 3 well known partners with excellent reputation:
 - John Meriwether (Salomon Brothers)
 - Myron Scholes (Nobel Laureate)
 - Robert Merton (Nobel Laureate)
- consistent and very good performance between 1994 and 1997
- more than USD 7 Bln. assets by 12/97
- banks eager to lend to LTCM



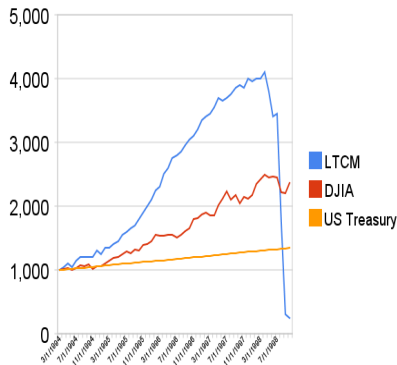
LTCM IN 1998

- The assets decreased with 82%
- 9/98: the Federal Reserve Bank of NY organises privately funded rescue plan with 14 banks and brokers
- They raise \$3.6 bln. in exchange for 90% of LTCM's equity



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- They raise \$3.6 bln. in exchange for 90% of LTCM's equity
- How was such a major disaster possible?



LTCM MADE RATIONAL BETS

THE PAIRS TRADES

- Royal Dutch Petroleum (RDP) and Shell Transport & Trading (STT) Both owned by Royal Dutch Shell
 - a DLC (Dual Listed Company)
 - 1998: a corporate charter linked the two companies by dividing the joint cash flows between them on a 60/40 basis
 - both shares quoted on the NYSE and the LSE
 - \implies Rational expectation: market cap of RDP = 1.5 market cap of STT
 - LTCM noticed that STT traded at a 8% discount
 - \implies pairs-trade: Long in STT and short in RDP

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 - \implies pairs-trade: Long in STT and short in RDP
- but, the spread continued to widen ...
- and LTCM had to close its position at a spread of 22%
- of course there were also the swaps, equity volatility, emerging markets (Russia), etc. ...

OTHER RISKS RELATED TO EXPLOITING INEFFICIENCIES

- Systematic Risk
 - stock undervalued \implies buy it \implies you expose yourself to the risk of that stock and its industry
 - you could hedge your position by shorting a similar stock
 - but it will never be a perfect hedge, there is still the systematic risk
- Remaining Risks:

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- Remaining Risks:
 - noise trader risk (De Long, Shleifer, Summers, and Waldmann 1990) and (Shleifer and Vishny 1997)
 - specific risk
 - systemic risk
 - Agent/Principal effect: the Principal will generally evaluate the Agent at short term returns (especially creditors)
 - forced liquidation of position increases the non-rational gap.

OTHER INHIBITORS

- bid-ask spread
- borrowing fee (for the short position)
- many important financial players are not allowed to take short positions (e.g. mutual funds, pension funds, ...)
- many investors or asset managers have simply other goals (index tracking, benchmark tilted, capital guaranteed, ...)

CONCLUSION FOR LIMITS TO ARBITRAGE

- Exploiting non-rational pricing can be
 - Risky
 - Costly
- \implies non rationalities **may** persist longer than than the rational trader can stay liquid.
- \implies markets can during certain periods deviate from what we would expect via the EMH framework

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- \implies markets can during certain periods deviate from what we would expect via the EMH framework
- \implies riding the trend can be the rational thing to do ...
- and ... who knows the real price anyhow?

FURTHER EVIDENCE OF NON-RATIONALITIES IN FINANCIAL MARKETS

- The Tulipomania – Amsterdam, 1637 – (Mackay 1841)
- The South-Sea Bubble – LSE, 1720 – (Mackay 1841)
- Twin Shares – e.g. (Froot and Dabora 1999): STT and RDS
- Index Inclusions – e.g. (Harris and Gurel 1986) and (Shleifer 1986)
- Internet Carve-Outs – e.g. 3Com and Palm (March 2000) – (Lamont and Thaler 2003)



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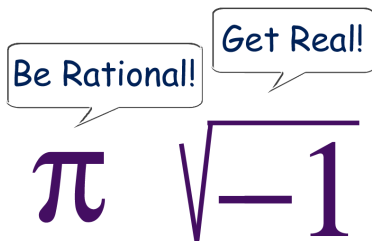
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ARE ONLY THE MARKETS INEFFICIENT?

- Markets can be at non-rational levels ...
- but can we at least hope that we, humans, see the world rational and make rational decisions based on our unbiased perception of the world?



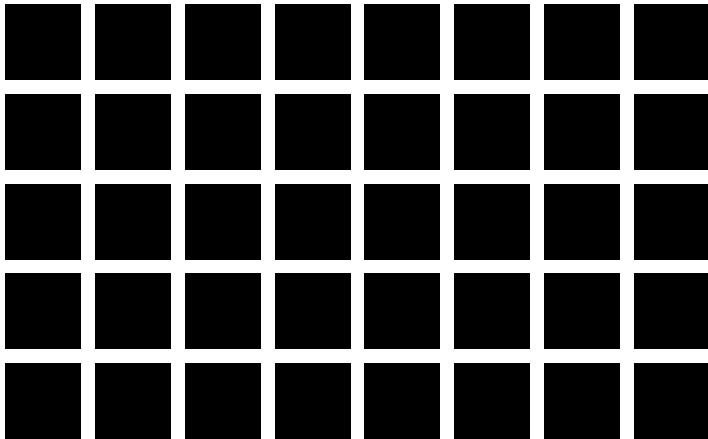


FIGURE: Gray dots appear at the intersection of the black squares (and if you focus on it, then it disappears, but others become visible).

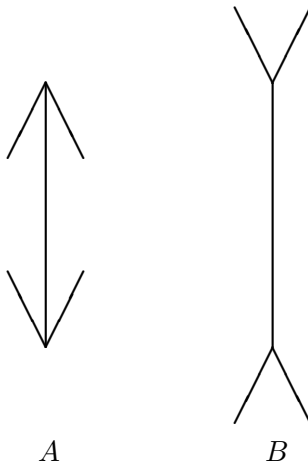


FIGURE: Which vertical line is longer? (only taking into account the vertical lines, not the arrows)

OVERCONFIDENCE

- When people give a 98% confidence interval, it contains only in 60% of the cases the true value – (Alpert and Raiffa 1982)
- When people say to be “certain”, then they are about 80% certain – (Fischhoff, Slovic, and Lichtenstein 1977)
- Related to:
 - hindsight bias
 - self attribution bias
 - optimism and wishful thinking: 90% of people believe to be over average in many common skills – (Weinstein 1980); and they generally are too optimistic in meeting deadlines – (Buehler, Griffin, and Moss 1994)

REPRESENTATIVENESS

- (Kahneman and Tversky 1974): “Linda is thirty-one years, single, outspoken and very bright. She majored in Philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti nuclear demonstrations.” – what is most probably:
 - ① Linda is a bank teller
 - ② Linda is a bank teller and is active in the feminist movement
- People tend to confuse “sounds like” with “is proof for”. Generally people act here in contradiction with Bayes’ law.
- Related to:
 - sample size neglect
 - hot-hand fallacy – (Gilovich, Vallone, and Tversky 1985)
 - the Law of Small Numbers – (Rabin 2002)
 - gamblers’ fallacy

BELIEF PERSEVERANCE

- Once people have formed their opinion, they stick to it too tightly and too long – (Lord, Ross, and Lepper 1979)
- Two effects:
 - ① people do not search for disconfirming evidence
 - ② if they find it anyhow, they treat it with excessive scepticism (i.e. they underreact to it)
- Related to:
 - Confirmation bias: people misinterpret disconfirming evidence as if it would support their beliefs
 - overconfidence
 - self-serving bias

ANCHORING

- When forming an estimate, people start from an initial (possibly) arbitrary value and then adjust ... but not enough – (Kahneman and Tversky 1974)
- Related to:
 - Availability Bias: people overestimate the value of the available information – (Kahneman and Tversky 1974)

FRAMING

Consider that you are participating in a game that consists out to two gambles: A and B, so choose an option in question A and B

A Choose an option.

- I a sure gain of € 2'400 [84%]
- II 25% chance to win € 10'000 and 75% chance to win nothing [16%]

B Choose an option.

- I a sure loss of € 7'500 [13%]
- II 75% chance to loose € 10'000 and 25% chance to loose nothing [87%]

FRAMING II

the results:

- ❶ $(A_i + B_i) = 100\%$ sure € 5'100 loss
- ❷ $(A_i + B_{ii}) = 75\%$ chance to loose € 7'600 and 25% to win € 2'400
- ❸ $(A_{ii} + B_i) = 25\%$ chance to win € 2'500 and 75% chance to loose € 7'500
- ❹ $(A_{ii} + B_{ii}) = 37.50\%$ chance on zero, 6.25% chance to win € 10'000, 56.25% chance to loose 10'000

→ In order to solve a problem, people break it down to small units and solve each of them overlooking correlations and interconnections – (Tversky and Kahneman 1981)

FRAMING III

Framing is a strong heuristic and leads to different other biases

- mental accounting
- consider gains and losses in stead of total wealth (consider each gamble separate)
- (and as a consequence) **loss aversion** (in stead of volatility aversion)
- labelling
- sunk cost fallacy
- loss aversion
- anchoring

HERDING BEHAVIOUR

- Assume that you're hungry and find two restaurants that only differ in name and in the number of guests: one is empty and the other is half full. Which restaurant would you choose?
- How hard is it to be the first to stand up and applaud after an opera that you particularly liked, or to remain seated when all are standing?
- Related to:
 - labelling, framing

PREFERENCES – LABELLING

Which do you prefer?

A a junk bond

B a high-yield bond

Other Biasses:

- hyperbolic discounting
- money illusion

PREFERENCES – PROSPECT THEORY

see (Kahneman and Tversky 1979) and for “cumulative prospect theory”: (Tversky and Kahneman 1992)

- *Descriptive* theory to explain choices under uncertainty
- that allows for:
 - mental accounting – (Thaler 2000)
 - loss aversion
 - non linear probability transformation
 - acts per gamble

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- (necessarily) in contradiction with EMH ...

WHAT IS BEHAVIOURAL FINANCE NOT?

- a normative theory(!)
- a portfolio selection method: so it is no replacement for Mean Variance (MV), CAPM and Safety First (SF)
- a sure way to beat markets (despite BAPT)
- (necessarily) in contradiction with EMH ...
- ...however a more complex model might be needed, for example the Adaptive Market Hypothesis (AMH) (Lo 2004)

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IMPROVE YOUR DECISIONS

- avoid framing: try to see the larger picture (look at it via another frame, another person's point of view, ...)
- when you're sure ... you're not (keep your exit routes available for the 20% surprises!)
- avoid confirmation bias and self serving explanations; look for dis-confirming evidence; learn from your mistakes and challenge your beliefs
- remember Bayes' Law – avoid being fooled by representativeness bias
- avoid sample size neglect: is it truly statistically significant?
- is your guess based on an anchor? ... then reconsider
- avoid excessive regret by hindsight: manage expectations (especially those of the Principal if you're the Agent)

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IMPROVE YOUR PORTFOLIO SELECTION SKILLS I

Before Selecting a fund manager we need to create the portfolio

- Read “Maslowian Portfolio Theory” (De Brouwer 2009), “Target Oriented Investment Approach” (De Brouwer 2010) or “Behavioural Portfolio Theory” (Shefrin and Statman 2000)
- ... or simply:
 - use mental accounts (create sub-portfolios)
 - make investment goals for each sub-portfolio explicit
 - remember the 93% rule – (Brinson, Hood, and Beebower 1986) and (Statman 2000)
 - use in a rational way an appropriate portfolio selection method (avoid pretending to use MV or CAPM while you're not)

IMPROVE YOUR PORTFOLIO SELECTION SKILLS II

- Read “The Utility of Wealth” – (Markowitz 1952b) ... and foresee that you will get used to your new wealth level → review all plans on a regular basis
- Have a framework that avoids emotions and biases from rational behaviour to ruin your performance: especially
 - “The Disposition to Sell Winners Too Early and Ride Losers Too Long” (Shefrin and Statman 1985)
 - being too overconfident and hence trading too much (Barber and Odean 2001)

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IMPROVE YOUR TRADING SKILLS

- Read “Behavioural Asset Pricing Theory” – (Shefrin and Statman 1994)
- Indeed: with hindsight one can find effects of labelling effect, trending and mean reverting patterns, etc.
- but avoid the fate of the “ABN Amro Behavioural Finance Fund”, LTCM and many others!
- i.e. re-read previous slide!
- Though some hedge fund managers are able to show a consistent out performance, one must consider (representativeness biases and sample size neglect bias) and conclude that “there is still no free lunch”

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HOW CAN BF HELP TO SELECT FUND MANAGERS? I

- first re-read previous slides
 - Improve Decisions
 - Select a portfolio that answers to your needs
- avoid to judge the fund manager (Agent) at short term (narrow frame)
- In the *qualitative part* of manager selection:
 - limit the role of your emotions (liking/preferring, being sure, representation bias (especially in combination with labelling = remember Madoff) ...)
 - if the fund manager is important (if it is not a quant method) then try to judge his/her level of overconfidence
- In the *quantitative part* of manager selections, especially be aware of:
 - hot hand fallacy,

HOW CAN BF HELP TO SELECT FUND MANAGERS? II

- sample size neglect,
- overconfidence,
- conservatism / belief perseverance
- labelling / herd behaviour (Madoff)

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 - composing a portfolio
 - selecting a manager
 - **understanding the manager**

THANKS

Thank you for your attention!

I happily take any questions now or by email philippe@de-brouwer.net

Philippe De Brouwer

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ABOUT THE AUTHOR

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Philippe De Brouwer

(41 y.o.), holds Master degrees in **Theoretical Physics** and **Applied Economics** (Commercial Engineering), and **prepares his PhD** in the domain of Behavioural Finance and portfolio theory.

He has a professional experience of 18 years and is active in asset management since 1996 (13.2 years). He joined Fortis Asset Management N.V. (Belgium) in 1996 and played a key role in the development of that company. *Philippe stood at the cradle of the capital guaranteed funds, then helped to structure the company and organized product development, facilitated international coordination, managed many cross business-line and cross country projects and finally managed hedge funds of funds, and became a specialist in behavioural finance, communication about risk and financial planning.*

In 2002 he joined KBC Asset Management N.V. and for that company he merged 4 daughter companies into one in Poland, and was many years *Chief Executive Officer* at KBC Towarzystwo Funduszy Inwestycyjnych S.A. (Poland). During that period (2005–2009) he drove his team to grow market share by 35%, while reducing the costs relative to the assets under management. Then (still in the same group) he became *Director and Member of the Board* of Eperon Asset Management Ltd (Ireland) that manages over 30 Bln. €, where his focus is predominantly general management, cppi funds and funds of hedge funds. Philippe holds simultaneously a board mandate in Archipel Fund Plc and KBC Live Fund Management Ltd.

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NOMENCLATURE I

AMH	Adaptive Market Hypothesis – (Lo 2004), page 36–40
BAPT	Behavioural Asset Pricing Theory, page 36–40
BF	Behavioural Finance, page 8
CAPM	Capital Asset Pricing Method, page 36–40
DLC	Dual Listed Company, page 12–14
EMH	Efficient Market Hypothesis, page 6
EUT	Expected Utility Theory, page 6
LSE	London Stock Exchange, page 12–14
LTCM	Long Term Capital Management (hedge fund), page 9
MV	Mean Variance – (Markowitz 1952a), page 36–40
NYSE	New York Stock Exchange, page 12–14
RDP	Royal Dutch Petroleum, page 12–14
SEUT	Subjective Expected Utility Theory, page 6
SF	Safety First – (Roy 1952), page 36–40
STT	Shell Transport and Trading, page 12–14