Behavioural Finance: Its Relevance for Selecting Fund Managers

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What Is Behavioural Finance?

Outline

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

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)

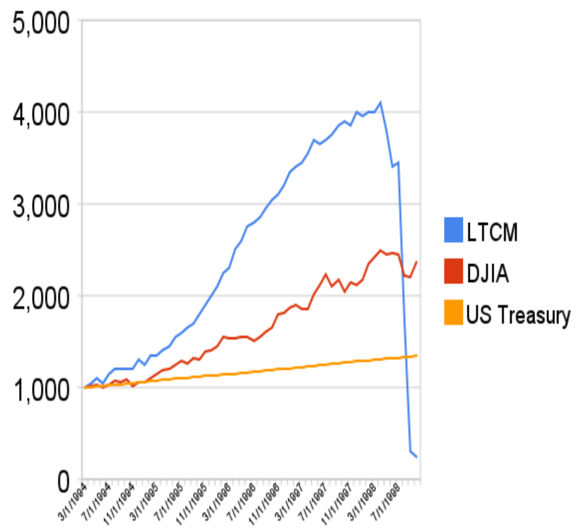
Long Term Capital Management (LTCM)

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



- 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
  - $\Longrightarrow$ Rational expectation: market cap of RDP = 1.5 market cap of STT
  - LTCM noticed that STT traded at a 8% discount
  - $\Longrightarrow$ 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. ...

Conclusion for Limits to Arbitrage

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

Question

Suppose that we (with the group in which we are now) would do a driving test and rank all drivers from the best to the worst. Then we split the group in half: group 1: 50% relatively best drivers and group 2: 50% relatively worst drivers. In which group would you end up?

1. group 1: 50% relatively best drivers
2. group 2: 50% relatively worst drivers

Question

The Amazon river is the longest river in South America. Please provide an upper boundary for the length of the river so that you're 90% sure that the real length is shorter. (please use km or mi)

For example, if you believe it to be $100km$ and you're reasonable sure, then you might consider to answer $120km$. So, we would expect that when all answers are taken together, 10% of the people will find that the correct answer is outside their confidence interval.

1. Yes, the real length is indeed lower than my upper bound.
2. No, the real length is longer . . . this is what is supposed to happen in 10% of the cases.

Overconfidence

- When people give a 98% confidence interval, it contains only in 60% of the cases the true value – (Alpert and Raiffa 1982)
- When they say to be "certain", then the 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)

Behavioural Finance | Market Efficiency and Limits to Arbitrage
Examples | Non Rational Choices
How can BF help to select fund managers? | Conclusion
Conclusions | What is Behavioural Finance NOT?

Question

Linda is thirty-one years, single, outspoken and very bright. She majored in Phylosophy. 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

Representativeness

- (Kahneman and Tversky 1974): "Linda is thirty-one years, single, outspoken and very bright. She majored in Phylosophy. 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

Behavioural Finance
Examples
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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)

Question

Suppose that you are participating in a game that consists out to two gambles: A and B. Choose an option in gamble A and B
Choose an option in Gamble A

1. a sure gain of € 2'400
2. 25% chance to win € 10'000 and 75% chance to win nothing

Choose an option in Gamble B

1. a sure loss of € 7'500
2. 75% chance to loose € 10'000 and 25% chance to loose nothing

Framing

Suppose 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%]

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Framing II

the results:

1. (Ai + Bi) = 100% sure € 5'100 loss
2. (Ai + Bii) = 75% chance to loose € 7'600 and 25% to win € 2'400
3. (Aii + Bi) = 25% chance to win € 2'500 and 75% chance to loose € 7'500
4. (Aii + Bii) = 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

Question

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?

1. the empty restaurant
2. the half full restaurant

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?
  - labelling

Question

Assume that you have bought a bond for your portfolio. Which one would be the most acceptable for your boss?

1. a junk-bond
2. a high-yield bond

Preferences – Labelling

Which do you prefer?

A a junk bond

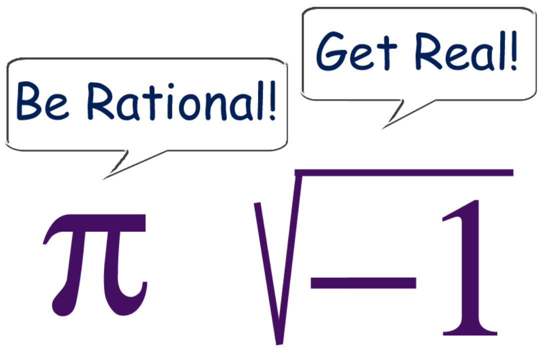
B a high-yield bond

Other Biasses:

- hyperbolic discounting
- money illusion

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?



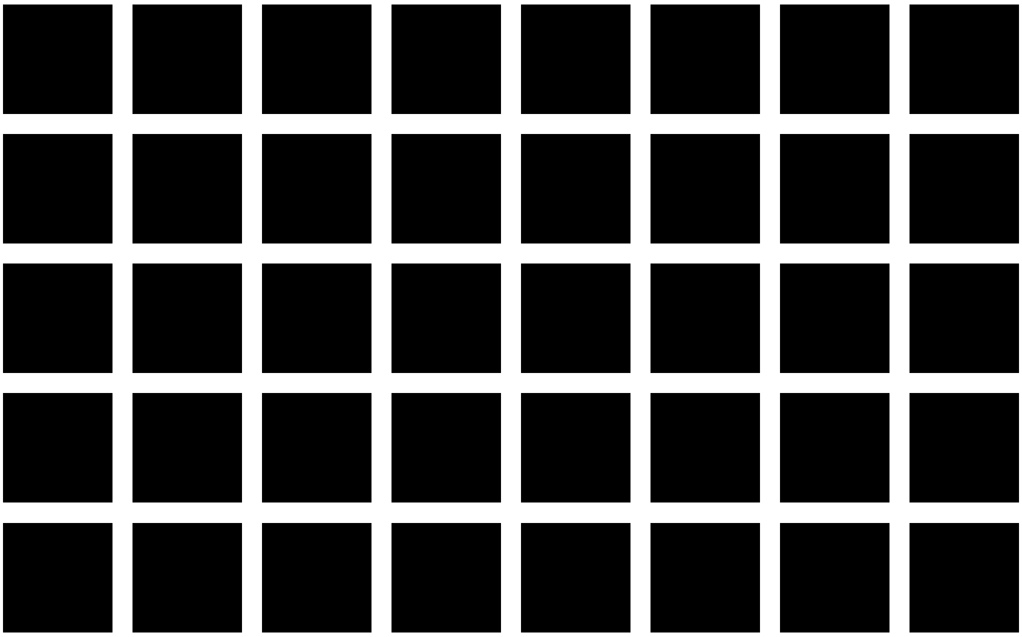


Figure: Gray dots appear at the intersection of the black squares (and if you focus on it, then it disappears, but others become visible).

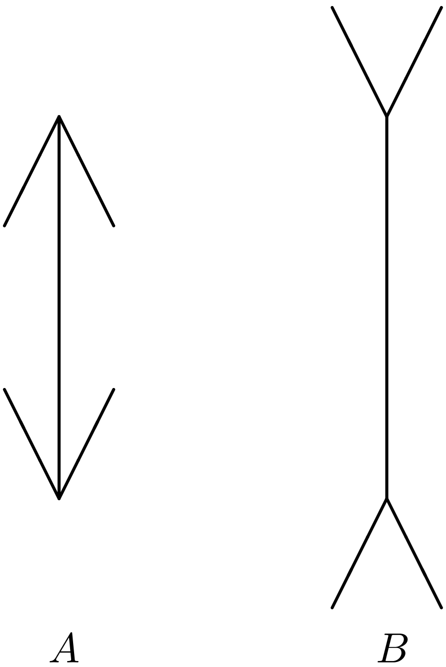


Figure: Which vertical line is longer? (only taking into account the vertical lines, not the arrows)

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)

Examples from Investment Practice

Outline

Behavioural Finance
Examples
How can BF help to select fund managers?
Conclusions

Some Examples I

- **buy more after market decline** ("to reduce average purchase price")← loss aversion, overconfidence
- a **portfolio of loser stocks** ← loss aversion, overconfidence, affect heuristic
- **home bias** ← label effect, prefer the known ⇒ suboptimal diversification
- ...or home bias for the location of the private banker
- **exclusive products** for exclusive clients ← labelling ⇒ products that are generally less diversified with higher (fixed) costs and the same MtM
- **bespoke products** ← labelling, overconfidence ⇒ products that are less diversified with higher (fixed) costs and the same MtM

Some Examples II

- **complicated products** ← labelling, overconfidence, (sometimes) loss aversion ⇒ investments with high costs, and proven mathematical inefficiency (e.g. (Bernard, Maj, and Vanduffel 2010) show that path dependency is not efficient)
- arguments such as "**most people choose option A**" ← works because of herding effect
- **bubbles** ← herd behaviour, greed, overconfidence, etc.
- **crashes** ← herd behaviour, fear, etc.

The Emotional Investment Life Cycle

Figure: The effect of all those biasses from rational behaviour on our investment life cycle.

The Life Cycle of a Bubble

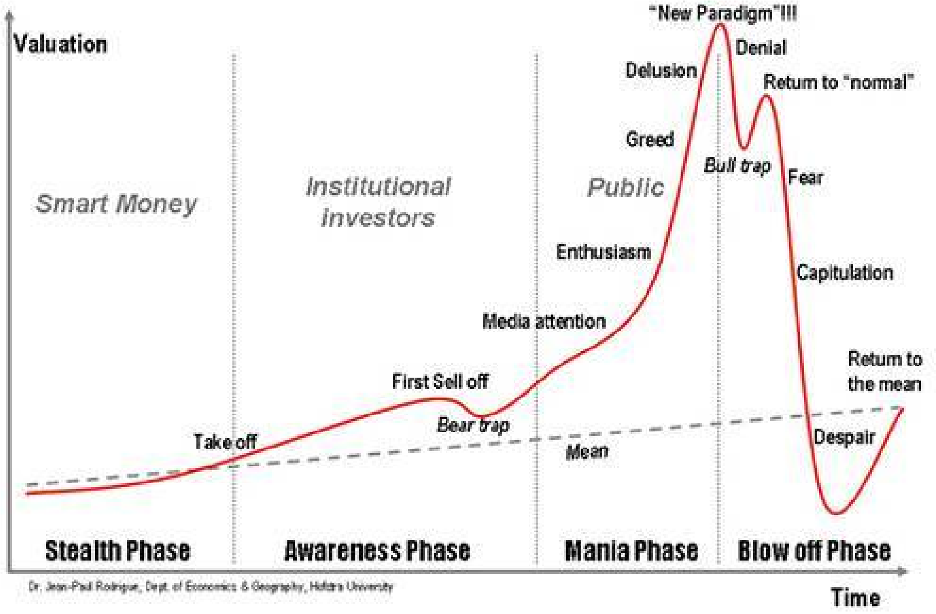


Figure: The life cycle of a bubble in financial markets.

citywire

The Truth

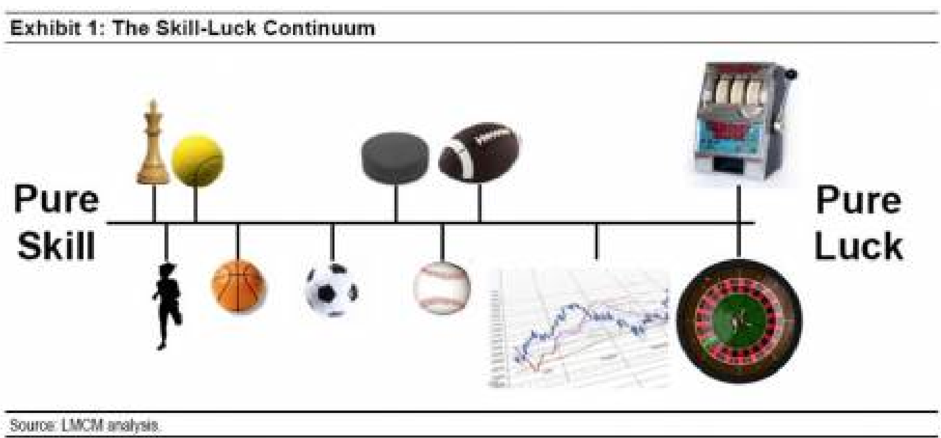


Figure: The truth about forecasting power in financial markets.

citywire

How can BF help to select fund managers?

Outline

How can BF help to select fund managers? I

- First **select your portfolio, according to your needs** (asset liability matching), only then think about the manager. The strategic benchmark is 93% of the issue (Gary P. Brinson and Beebower 1986)
- Realize that **you as well as the fund manger are humans**, ... hence overconfident herding animals, that rely on framing and anchoring and labelling heuristics! So ...
  - 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) ...)

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How can BF help to select fund managers? II

  - if the fund manger is important then his/her level of overconfidence is important
- In the *quantitative part* of manager selections, especially be aware of:
  - hot hand fallacy,
  - sample size neglect,
  - overconfidence,
  - conservatism / belief perseverance
  - labelling / herd behaviour (Madoff)

Conclusion

Outline

Conclusions

- the Efficient Market Hypothesis is not dead
- but Behavioural Finance is real
- Behavioural biasses are deeply rooted in the unconscious part of the brain ← it is not possible to get “unbiased”, but reconsider with an open mind decisions.
- Understanding Behavioural Finance is understanding yourself and others ...
- ...and therefore helps in various ways
  - composing a portfolio
  - selecting a fund manager
  - understanding the fund manager
  - understanding the investor
- But Behavioural Finance is not a new *normative* framework.
- Nor is BF a magic recipe to outperform markets.

Thanks

Thank you for your attention!

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

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About the author

Philippe De Brouwer

(42 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 20 years and is active in asset management since 1996 (15 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 Inwestytcynych 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 *Executive Director and Member of the Board* of Eperon Asset Management Ltd (Ireland) that manages over 30 Bln.€, where he is CFO, COO and supervises 17 Bln.€ in structured 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 31
BAPT	Behavioural Asset Pricing Theory, page 31
BF	Behavioural Finance, page 7
DLC	Dual Listed Company, page 9
EMH	Efficient Market Hypothesis, page 5
EUT	Expected Utility Theory, page 5
LSE	London Stock Exchange, page 9
LTCM	Long Term Capital Management (hedge fund), page 7
MtM	Marked to Market, page 35
NYSE	New York Stock Exchange, page 9
RDP	Royal Dutch Petroleum, page 9
SEUT	Subjective Expected Utility Theory, page 5
STT	Shell Transport and Trading, page 9