Introduction to Behavioral Economics for Master Program

Lecture 2.3 BE: Emotional biases

Overoptimism bias

What does it mean?

- Everybody wears „pink glasses“

Real life example

- 80% of drivers rate themselves as above-average

Investing

- „My investment performance will be ca 25% every year“

How to make better decisions?

- Think in terms of „probability distributions“
- DCF, Capital projects analysis – be conservative

Overconfidence bias

What does it mean?

- Poor calibration, too narrow confidence intervals ⇒ People are surprised more often compared to their expectations, predominantly on the downside; Connected to fat-tail problem (VaR, stress testing, sensitivity analysis) and black-swan concept

Real life example

- State 90% confidence interval of number of Africa population ⇒ Only 50% answers correct ⇒ Poor calibration, frequent surprises

Investing

- Portfolio return range in one year -5% - 25% ⇒ Unexpected underperformance of majority of investors
- Too frequent trading (Trading is hazardous to your wealth – Barber, Odean), Men vs. Women

How to make better decisions?

- Investors should focus on long-term horizon of at least 5 years and do not gamble / speculate, avoid short-term gambling / casino
- DCF, Capital projects analysis – Sensitivity analysis / scenarios analysis / stress testing / crash tests – Worst case scenarios should be on average even much worse

Self-attribution bias

What does it mean?

- „Our successes are caused by our skills, knowledge and hard work, but our failure are caused by someone else or bad luck“

⇒People do not learn from their past failures and mistakes!

Real life example

- Failing to pass an important exam

Investing

- Successful and unsuccessful stock picks

How to make better decisions?

- Investing – Write down detailed records of your investment decisions and actions
- Try to be as frank as possible to yourself, try to avoid any regrets
- Analyze current decisions and results of past decisions in consistent and open way

Self-control & Procrastination

What does it mean?

Procrastination (from the Latin pro, meaning for; and eras, meaning tomorrow) is rooted in the same kind of problem. When we promise to save our money, we are in a cool state. When we promise to exercise and watch our diet, again we're cool. But then the lava flow of hot emotion comes rushing in: just when we promise to save, we see a new car, a mountain bike, or a pair of shoes that we must have. Just when we plan to exercise regularly, we find a reason to sit all day in front of the television. And as for the diet? I'll take that slice of chocolate cake and begin the diet in earnest tomorrow.

Giving up on our long-term goals for immediate gratification is procrastination.

Real life example

How much do we lose when our fleeting impulses deflect us from our long-term goals?

Although almost everyone has problems with procrastination, those who recognize and admit their weakness are in a better position to utilize available tools for precommitment (предварительное обязательство) and by doing so, help themselves overcome it.

when an authoritative "external voice" gives the orders, most of us will jump to attention.

How to make better decisions?

1) The "ice glass" method as a cooling-off period for large

Items (put your credit card in glass with water and safe it at your refrigerator);

2) Health care programs

3)Card limit Programs

By D. Ariely (1)

The third class received what might be called a dictatorial treatment: I dictated three deadlines for the three papers, set at the fourth, eighth, and twelfth weeks.

These were my marching orders, and they left no room for choice or flexibility.

Of these three classes, which do you think achieved the best final grades? Was it Gaurav and his classmates, who had some flexibility? Or the second class, which had a single deadline at the end, and thus complete flexibility? Or the third class, which had its deadlines dictated from above, and therefore had no flexibility? Which class do you predict did worst?

When the semester was over, Jose Silva, the teaching assistant for the classes (himself an expert on procrastination and currently a professor at the University of California at Berkeley), returned the papers to the students.

We could at last compare the grades across the three different deadline conditions.

We found that the students in the class with the three firm deadlines got the best grades; the class in which I set no deadlines at all (except for the final deadline) had the worst grades; and the class in which Gaurav and his classmates were allowed to choose their own three deadlines (but with penalties for failing to meet them) finished in the middle, in terms of their grades for the three papers and their final grade.

By D. Ariely (2)

What do these results suggest? First, that students do procrastinate (big news); and second, that tightly restricting their freedom (equally spaced deadlines, imposed from above) is the best cure for procrastination.

But the biggest revelation is that simply offering the students a tool by which they could precommit to deadlines helped them achieve better grades.

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What this finding implies is that the students generally understood their problem with procrastination and took action to fight it when they were given the opportunity to do so, achieving relative success in improving their grades.

But why were the grades in the self-imposed deadlines condition not as good as the grades in the dictatorial (externally imposed) deadlines condition?

My feeling is this:

not everyone understands their tendency to procrastinate, and even those who do recognize their tendency to procrastinate may not understand their problem completely.

Yes, people may set deadlines for themselves, but not necessarily the deadlines that are best for getting the best performance

Smart Cards

Now this may sound like a pipe dream, but it isn't.

Think about the potential of Smart Cards (thin, palm-size cards that carry impressive computational powers), which are beginning to fill the market.

These cards offer the possibility of being customized to each individual's credit needs and helping people manage their credit wisely.

Why couldn't a card, for instance, have a spending "governor" (like the governors that limit the top speed on engines) to limit monetary transactions in particular conditions?

Why couldn't they have the financial equivalent of a time-release pill, so that consumers could program their cards to dispense their credit to help them behave as they hope they would?

Dan Ariely, Predictably Irrational

https://www.facebook.com/OffTheLeashDailyDogCartoons/videos/1568698279873037/?id=100000879162743

Other examples of bounded rationality

- Dan Ariely's video: are in control of our decisions? (from 11:10 to 14:25)
- http://www.youtube.com/watch?v=9X68dm92HVI

http://www.economicsonline.co.uk/Behavioural_economics/Bounded_rationality_and_self_control.html (1)

Bounded self-control

- The second area for behavioural economists is to question the idea that individuals are able to exercise self-control when presented with certain choices.
- The assumption of diminishing marginal utility
- In traditional theory, the additional benefit from consumption of a good or service will decline with each extral unit consumed - marginal utiity will diminish.
- The second unit provides less marginal utility than the first, and the third less than the second, and so on.
- The assumption of diminishing marginal utility underpins traditional economic thinking - indeed, it is one way that economists derive the basic downward sloping demand curve.
- But is this an accurate description of the compulsive gambler, or the over-eater?

http://www.economicsonline.co.uk/Behavioural_economics/Bounded_rationality_and_self_control.html (2)

Lack of self control

EX.: While an individual may feel fuller after each unit of food consumed, self-control may not be exerted, and the individual eats an amount larger than is optimal for their immediate health and life expectancy.

- This difficulty in exerting self-control may, clearly, be shaped by the primitive biological instinct to 'eat as much as you can at times of a food shortage', but why would this view still be driving the excessive eating of an otherwise intelligent individual who we assume knows full well that there is no food shortage and that there will definitely be food tomorrow.
- Here, individual psychology is at odds with the predictions of traditional economics.
- Traditional economic theory accepts that some goods are habit forming, but rarely goes beyond this to suggest, perhaps, that irrational economic decision making is far more widespread than assumed.

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http://www.economicsonline.co.uk/Behavioural_economics/Bounded_rationality_and_self_control.html

2 Examples:

EX.1: The tendency for individuals to over-react to new information when it is presented.

When investors were exposed to a series of ‘good news’ stories about investments they would tend to over-value the investment, while ‘bad news’ stories about other investment would lead to an under-valuation of the investment.

They have, in short, over-reacted to the data which indicates that absolute self-control was not exercised.

W. De Bondt & R. Thaler, 1985)

http://www.economicsonline.co.uk/Behavioural_economics/Bounded_rationality_and_self_control.html

2 Examples:

EX.1: 2) Phenomenon of under-saving for retirement.

Even though individuals may be bombarded with information about the importance of saving for retirement, it would mean that consumption spending out of current income would have to be somewhat less to enable savings to be put into a savings scheme.

This would be the 'rational choice' – but individuals are not exercising self-control in terms of current consumption, and hence under-saving.

Individuals are much more impatient when confronted with a short term decision (about consumption) and may take the 'I must have it now' option, compared with long term decisions (about saving), where individuals are much more patient, and take a 'I'll start saving for my retirement next year' attitude, and hence procrastination prevents a rational decision being made.

The fear of losing a certain amount of short term consumption may be much greater than expected benefit of increased consumption in the future, through savings today.

Unbounded will power: Dan Ariely's experiment (Ariely 2008, 109-117) -1

- Assume that at the beginning of a course you have to decide when you will hand three compulsory papers for the course.
- Once you have chosen a deadline, it can't be changed and if you hand in the paper late, then you would be penalized 1% for each day late.
- You can always turn your paper in earlier, before the deadline, but the professor won't read the paper until the end of the course nor would you get higher grades for submitting your work earlier.

Unbounded will power: Dan Ariely's experiment -2

- The course starts on week 1 and ends on week 12.
- What do you choose?
  - I promise to submit paper 1 on week ……
  - I promise to submit paper 2 on week……
  - I promise to submit paper 3 on week……..

Unbounded will power: Dan Ariely's experiment - 3

- A student with unbounded will power will choose to submit the papers the last day of class
- She can always hand-in them earlier if she wishes, so why risk being late by picking an earlier deadline?

Unbounded will power: Dan Ariely's experiment -4

- However, if students recognize that they tend to procrastinate (= lykätä) and leave the writing of the papers to the last minute, they may choose earlier deadlines to force themselves to start working on the papers on time.

Unbounded will power: Dan Ariely's experiment -5

- How did Ariely's students behaved when given the freedom to choose the deadline to hand-in papers?

- Did the choice of the dealine affect the quality of the papers and the grades students got?

Unbounded will power: Dan Ariely's experiment – 6

- Variations to the experiment:
  - Class 1: could choose the three dates on which to hand-in the papers with penalty in case of delay, earlier submission allowed.
  - Class 2: had to submit all papers the last day of the course, but could submit earlier without any grade benefit.
  - Class 3: students were given three deadlines for the three papers on the 4th, 8th and 12th week, no flexibility on hand-in date at all.

Unbounded will power: Dan Ariely's experiment - 7

- Which class do you think did best (gradewise)?
- Which had the lowest grade?

Unbounded will power: Dan Ariely's experiment - 8

- Which class do you think did best (gradewise)?
- Which had the lowest grade?
  - Class 3 did best (no flexibility, three fixed deadlines)
  - Class 2 had the poorest results (had to submit all papers the last day of the course)
  - Class 1 finished in the middle.

Unbounded will power: Dan Ariely's experiment - 9

What do these results suggest

1. *Students do procrastinate*
2. *Tighlty restricting their freedom (equally spaced deadlines imposed from above) is the best cure for procrastination.*
3. *But the BIGGEST REVELATION is that simply offering the students a TOOL by which they could PRECOMMIT to deadlines helped them achieve better results.*

Unbounded will power: Dan Ariely's experiment - 10

- Why then did self-imposed deadlines did not achieve as good grades than the deadlines set by the professor?

Unbounded will power: Dan Ariely's experiment - 11

- One possible interpretation (Ariely 2008, 115):
  - Not all students understand their tendency to procrastinate (some choose to hand in on the last day of course).
  - Those who do understands it, do not understand it fully, thus even when they choose earlier deadlines when given the choice, they do not choose those that help getting the best results.

Behavioral Economics; Bounded Willpower

- Other examples:
  - Today you are sure you want to quit smoking cigarettes, and you do. But tomorrow you start smoking again.
  - Your sincere New Year's resolution is to exercise regularly, but you don't.
- Some implications for economic theory and economic policy:
  - *Theory:* Can we interpret consumer surplus from markets where unbounded will power may be a significant problem, for instance from the markets of cigarettes, as a measure of consumers' utility/well-being?
  - *Policy:* Are so called "*sin taxes*" (e.g. taxes on cigarettes) justified on the basis of unbounded will-power argument (not on the externality argument)?

Unbounded will power and ”success”

- The ability to exercise will power and delay gratification as a 4-year old kid is a potent predictor of how well the kid will do once grown up in life (family, school, friends, work).
- Experiment: 4-year old kid alone in a room with a marshmallowe. If he can wait 15 minutes without eating it, he will be given two marshmallows after the waiting period.
- 2/3 of kids eat the marshmallow
- See http://www.ted.com/talks/joachim_de_posada_says_don_t_eat_the_marshmallow_yet.html (3.27)

A status quo bias

A status quo bias concerns the tendency for individuals to continue to make a choice even after the decision has lost some or all of its benefit.

This bias creates a form of inertia, and can help explain why producers can generate extra revenue by raising prices for long standing customers.

Even despite the popularity of comparison websites, under controlled experiments, individuals still tend to rate their existing insurance provider higher than other providers that they had never used, even when prices are cheaper.

Endowment bias

What does it mean?

- When owning something people have a systematic tendency to value it much more than other people who do not own it
- Causes in general much lower market traded volumes than implied by classical economics / expected utility theory

Real life example

- Professor of economics – French wine
- MBA students – Tea cups

Investing

- Causes “irrational premium“ to assets we have in our portfolio

How to make better decisions?

- Ask yourself: If I did not own it, would I buy it for the price I am attaching to it now (including the “irrational premium“)
- Experience lowers endowment effect

CLASSROOM EXPERIMENTS IN BEHAVIORAL ECONOMICS

We conducted several experiments in which students randomly received one of a pair of goods.

In one study, we used rolls of Top Drop or Top Gum (two types of licorice); in another study, we used Toblerone or Milka chocolate bars. We told the students that the product they had received was theirs to keep. When the students were offered the possibility of exchanging their good for the alternative, less than 20 percent wanted to trade (thus showing the endowment effect). Then we asked all students to justify their decisions. Of those who did not want to trade, a large majority stated that they preferred the candy they had in their hand to the alternative, even though the initial distribution had been random. Clearly, simply receiving some candy had the effect, for many people, of making it their "most preferred."

CLASSROOM EXPERIMENTS IN BEHAVIORAL ECONOMICS

This result substantially deviates from the standard economic expectation. Similar results were obtained by asking nonowners of a good for their willingness to pay (WTP) for the good. Kahneman, Knetsch, and Thaler (1990) report an average WTP of $2.21 for a mug.

Likewise, owners of the good were asked for their willingness to accept (WTA) the loss of the good in exchange for a monetary compensation. The average monetary compensation required (WTA) was $5.78 The WTA was 161 percent higher than WTP, indicating the effect of loss aversion for the owners of the good.

How can we know that the endowment effect is due to loss aversion rather than "acquisition aversion" (resulting in lower WTP)?

Kahneman, Knetsch, and Thaler (1990) compared product valuations of three groups: buyers, choosers, and sellers.

<u>Buyers</u>' average WTP for a mug amounted to $2.87, whereas <u>sellers</u>' average WTA was $7.12. The WTA/WTP ratio of 2.5 clearly shows the endowment effect.

<u>Choosers</u> neither owned a mug nor were asked to pay for the mug. They indicated for a number of different cash amounts whether they preferred the mug or cash. The amount at which choosers were indifferent between the mug and cash, $3.12 on average, indicated their value of the mug. Since the choosers' valuations were very close to the buyers' evaluation, the WTP/WTA disparity can hardly be explained by reluctance to pay for the mug but should be explained from loss aversion.

CLASSROOM EXPERIMENTS IN BEHAVIORAL ECONOMICS

Hedonic versus functional goods. Since hedonic goods can be defined as providing affective and sensory experiences of aesthetic or sensory pleasure, fantasy, and fun (Hirschman and Holbrook 1982), these goods may lead to more psychological attachment than functional goods, whose consumption is more cognitively driven and goal-oriented and which accomplish a functional or practical task (Strahilevitz and Loewenstein 1998). Hence the willingness to exchange may be lower for hedonic than functional goods. Further, since money is supposed to lead to even less psychological attachment, willingness to exchange money will be higher than for goods.

In the mobile laboratory we studied the endowment effect for a hedonic good (peppermint) versus a functional good (pen). It appeared that willingness to exchange the hedonic goods was lower than for the functional good. However, Knetsch (1989) found hardly any difference in willingness to exchange across the two types of good. Knetsch (1995) used goods versus goods and goods versus money. It appeared that money was exchanged more easily than goods, although the result was not significant. Dhar and Wertenbroch (2000) found a strong difference in choices for giving up M&Ms or glue sticks when individuals were endowed with both goods. The willingness to give up the glue stick was far greater than for the M&Ms.4

Ambiguity aversion bias

What does it mean?

- People are too cautious, extremely slow when facing new realities

Real life example

- “I have never been to Asia and Latin America, I am bit worried about potentially travelling there”

Investing

- Home-bias – Investing only in geographically close and well know region(s)

How to make better decisions?

- Continuous studying on your own! Be expert in your area, be excellent!

Home Bias -1

(https://www.investopedia.com/terms/h/homebias.asp#ixzz57Z4gWaeU)

Home bias…

- …is the tendency for investors to invest in a large amount of domestic equities, despite the purported benefits of diversifying into foreign equities.
- …is believed to have arisen as a result of the extra difficulties associated with investing in foreign equities, such as legal restrictions and additional transaction costs.

Ex.1. It's easiest to feel the boundaries of control, having watched yourself. Try perform 3 exercises step by step

1) 5 minutes without movement: sit, not changing the pose and not moving any part of the body.

First, it is not easy.

Secondly, you will find that to exercise control you only have a fraction of a second-this is the time between the urge to move and the movement itself, when you can stop yourself.

Ex.1. It's easiest to feel the boundaries of control, having watched yourself. Try perform 3 exercises step by step

2) 3 minutes of sensory stillness: look at one point without looking away, not be distracted by noise, focus on one tactile sensation.

The ability to control in this situation is reduced by an order of magnitude: between the urge to attention movement and the movement itself is even less time.

Ex.1. It's easiest to feel the boundaries of control, having watched yourself. Try perform 3 exercises step by step

3) 1 minute of immobility of the mind: try not to think about anything.

The time gap for control disappears. Thoughts come and go by themselves in a notification order.

Control even itself is obtained within very narrow limits, and control of the outside world is utopian.

Victor Frankl ideas

Adopting the boundaries of control is the only way to develop a realistic and constructive attitude to life and avoid unnecessary frustrations (including in oneself).

You can control a lot, but not everything. Where control ends, freedom of choice of attitude to what is happening begins.

Ex.2 The limitations of cognitive resources aggravate the problem of self-control (due to the convexity of the increase limiting costs of self-control):

- Participants are asked to memorize a 2- or 7-digit number.
- Then choose to choose one of the desserts: chocolate cake or fruit salad.
- 7-bit participants choose (less useful) cake in 63% of cases, whereas 2-digit participants - only in 41% of cases.
- If instead of real desserts, their images, the cake is chosen only in 45% and 42% cases respectively (i.e., direct temptation more effective).

Ex.3 Self-control - 1

A unique example of employee behavior change is provided by a recent field experiment

conducted in the airline industry (Metcalfe, Gosnell & List, 2016).

The researchers aimed to increase fuel-efficient flying behavior among pilots.

The experimental participants were informed that their flight and fuel behavior would be monitored for a period of eight months.

A feedback group was told about their flight performance on a monthly basis.

A target group was given a performance target 25% above their past performance, in addition to the feedback.

Ex.3 Self-control - 2

Finally, a prosocial incentives group was given feedback and a performance target and told also that a small donation would be made on their behalf for meeting the target.

The data collected from thousands of flights showed that pilots' awareness of being monitored alone led to a significant improvement in fuel efficiency (the Hawthorne Effect), whilst participants who were given a target had the best performance, regardless of whether a prosocial incentive was provided.

The researchers estimated that their practically costless intervention led to fuel cost savings of $5.4 million for the airline (Virgin Atlantic) and over 21,500 metric tons of carbon dioxide (CO2) emission reductions for the duration of their study.

Moreover, the study appeared to induce a longer-term change in habits, as the captains continued to demonstrate these fuel-efficient behaviors after the study ended (for at least six months).

Ex.4 Status quo Example

In 2011, FehrAdvice & Partners AG and the University of Zurich used the BEATM Behavioral Change Matrix to analyze civic responsibility topics and formulate recommendations for policy interventions in a small Middle Eastern country.

A multitude of civic responsibility issues, e.g. “Low adherence of traffic rules”, and “Queue Jumping” were identified and positioned in the BEATM Behavioral Change Matrix using an experimental assessment.

Policy recommendations were formulated on the basis of the abovementioned framework. “Queue Jumping” was identified to be a Quadrant 2 issue: people were willing to comply but not sufficiently aware of the consequences of their behavior.

A communication campaign highlighting how other people Behavioral Economics Guide 2017 are harmed by queue-jumpers was recommended. In contrast, “Low adherence to traffic rules” was positioned in Quadrant 3, as people expressed that they were unwilling to comply with traffic rules despite being highly aware of the dangers involved in such breaking.

Fortifying the punishment system by accelerating the fine-paying process and closing administrative loopholes to avoid paying the fines were identified as the most effective measures to combat the problem.

http://siimland.com/thinking-fast-and-slow-explained/

Another example of the same hook is the "30-day moneyback guarantee." If we are not sure whether or not we should get a new sofa, the guarantee of being able to change our mind later may push us over the hump so that we end up getting it. We fail to appreciate how our perspective will shift once we have it at home, and how we will start viewing the sofa—as ours—and consequently start viewing returning it as a loss. We might think we are taking it home only to try it out for a few days, but in fact we are becoming owners of it and are unaware of the emotions the sofa can ignite in us.

OWNERSHIP IS NOT limited to material things. It can also apply to points of view. Once we take ownership of an idea—whether it's about politics or sports—what do we do?

We love it perhaps more than we should. We prize it more than it is worth. And most frequently, we have trouble letting go of it because we can't stand the idea of its loss. What are we left with then? An ideology—rigid and unyielding.