Behavioral finance

- traditionally, economists’ models have assumed that market participants are rational
  - update beliefs correctly when new information arrives
  - given beliefs, make sensible decisions

- behavioral finance argues that many financial phenomena are the result of less than fully rational behavior on the part of some participants
  - borrows insights from psychology
  - particularly from the work of Daniel Kahneman and Amos Tversky

- it has been used to think about:
  - the pricing of financial assets
  - individual investor behavior
  - aspects of corporate finance
Behavioral finance

♦ “rational agents” camp:

(Eugene Fama, Chicago)

♦ “behavioral finance” camp:

(Robert Shiller, Yale)
today, we’ll look at the financial crisis from a behavioral finance perspective
  — the role of less than fully rational thinking in the crisis
  — the role of psychological factors in creating and amplifying the crisis
Overview

- Borrowers
- Loan originators
- Investment banks
- Rating agencies
- End investors
Two commonly-heard views of the crisis:

[1] The “bad incentives” view

- banks knew that subprime loans had a significant risk of default, but their incentives led them to keep originating and packaging
  - their compensation was based on volume

but…

- senior figures at the banks suffered large financial losses in the crisis
  - would they really have pursued the strategy they did if they were aware of the risks?
[2] The “bad models” view

♦ there was nothing wrong with incentives
  — banks simply failed to forecast the likelihood and severity of a collapse

♦ e.g. their models failed to take into account the possibility of a national downturn in housing prices
  — and neglected “fat tails”

*but*…

♦ how could so many smart, well-trained people be comfortable with such deficient models?
in this talk, we suggest an alternative view:
— on some level, banks were aware that there were problems with the business model
— but as a result of a variety of psychological forces, they deluded themselves into thinking that everything was OK

we also discuss the psychological factors that may be relevant to:
— the lack of trading in some debt markets
— the firm belief that house prices would keep on rising
— the willingness of households to take out excessively large loans
Cognitive Dissonance

◊ the discomfort we feel when we take an action that conflicts with our (typically positive) self-image
   — to reduce the feeling of discomfort, people often manipulate their beliefs
   — e.g. a smoker will tell himself that smoking isn’t actually that risky

Application

◊ people working in banks typically have a very positive self-image
   — any signs that what they were doing was not sensible would quickly induce dissonance
   — as a result, they might manipulate their beliefs, and convince themselves that everything was OK
Conformity

♦ there is a strong tendency to conform to what the group you belong to is doing, even if you don’t think it makes sense
  — stems from the basic human need to be liked and accepted by others

*The Asch line experiment (1951)*

♦ ask each person in a group to decide which of three lines is closest in length to another, given line
  — all subjects but one are accomplices of the experimenter

♦ in one trial, the subjects “in the know” all deliberately give the wrong answer
  — the remaining subject publicly conforms to this erroneous view around 50% of the time!
  — in private, however, he continues to disagree
Conformity

*The Asch line experiment*, ctd.
Conformity

Application

♦ even if some bankers or traders see problems, they may keep quiet for the sake of conformity

♦ studies also show that conformity increases with the “strength” and “immediacy” of the group
  — the importance of the group to you
  — the proximity of other group members
**Groupthink**

- a kind of thinking in which group cohesiveness is more important than carefully considering the facts
  - Janis, 1972

- thought to be particularly strong when:
  - the group is valued and attractive to belong to
  - the group is isolated from other opinions
  - there is a strong leader who makes his views known
  - the situation is stressful
  - there is no process for considering other viewpoints

- symptoms:
  - people decide not to voice contrary opinions, so as not to “rock the boat”
  - there is pressure on dissenters to conform
  - opposing opinions are viewed in a stereotyped, simplistic way
Groupthink

Early applications

♦ Bay of Pigs disaster
♦ invasion of Korea in 1950
♦ escalation of Vietnam war in 1960’s
♦ CIA assessment of the state of Iraqi weaponry

Application to the current crisis

♦ several of the preconditions for groupthink are met
Obedience

♦ people are remarkably willing to follow instructions from an authority figure, even when the task seems inappropriate

*The Milgram experiment, 1963*

♦ the experimenter tells one subject (the “teacher”) to administer electric shocks to another subject (the “student”) whenever the latter gets a test question wrong
  — the student is an accomplice; the shocks appear real to the teacher, but are not

♦ Milgram found that the teacher was remarkably obedient, even when the student appeared to be in great distress
  — 62% were willing to deliver even the most powerful shock, described as 450 volts
Obedience

The Milgram experiment, ctd.
Obedience

At least two factors are at work:

♦ we are reluctant to disappoint an authority figure, even if we will never see him again

♦ in confusing situations, we look to authority figures for guidance on what to do

Application

♦ many people working in banks may have felt that what they were doing was not completely sensible — but they felt a psychological need to do what their bosses wanted
Diffusion of responsibility

♦ when many different parties are contributing to a flawed process, it is easier for each of them to tell themselves that they are not at fault

Application

♦ the process of securitization does indeed involve many distinct parties:
  — the borrower; the mortgage broker; the mortgage originator; the investment bank; the rating agency, etc.
Other Factors

- we now look at psychological factors that may have played a role in other aspects of the crisis

*The lack of trading in many debt markets*

- trust; ambiguity aversion

*The firm belief that house prices would keep rising*

- representativeness; overconfidence

*The willingness of individuals to take out excessive loans*

- representativeness; optimism
many observers have pointed out the etymological root of “credit”: *credere*
   — the breakdown of trading in some markets may have been hastened by a deterioration in trust among market participants

in a survey of 1,943 Dutch households, less trusting households invested less in the stock market
   — Guiso, Sapienza, Zingales (2008)

trust is measured through survey questions:

“*Generally speaking, would you say that most people can be trusted or that you have to be careful in dealing with people?*”
trust also explains *cross-country* differences in stock market participation rates.
Ambiguity Aversion

- people strongly dislike situations where they do not feel able to assign probabilities to outcomes — the “Ellsberg paradox”, 1961

- Urn C (“Certain”) contains 100 balls: 50 Red, 50 Black

- Urn U (“Uncertain”) contains 100 balls: some Red, some Black, of unknown proportions

- now choose between:
  - bet R1: draw ball from Urn C, $20 if Red
  - bet R2: draw ball from Urn U, $20 if Red

- also choose between:
  - bet B1: draw ball from Urn C, $20 if Black
  - bet B2: draw ball from Urn U, $20 if Black

- people prefer R1 to R2 and B1 to B2
  - but this is not consistent with any beliefs you might have about the composition of Urn U
Ambiguity Aversion

Application

♦ news about defaults has made traders extremely uncertain about the portfolios banks hold and about the values of debt instruments
  — this may have induced ambiguity aversion and hence a reluctance to trade
Representativeness

- people’s tendency to think they see patterns in data that is actually completely random
  - they see trends where there aren’t any
  - e.g. belief in “hot hand” in basketball

| Player          | P(x|ooo) | P(x|oo) | P(x|o) | P(x) | P(x|x) | P(x|xx) | P(x|xxx) | r     |
|-----------------|---------|--------|-------|------|--------|--------|----------|-------|
| C. Richardson   | .50     | .47    | .56   | .50  | .49    | .50    | .48      | -.02  |
| J. Erving       | .52     | .51    | .51   | .52  | .53    | .52    | .48      | .02   |
| L. Hollins      | .50     | .49    | .46   | .46  | .46    | .46    | .32      | .00   |
| M. Cheeks       | .77     | .60    | .60   | .56  | .55    | .54    | .59      | -.04  |
| C. Jones        | .50     | .48    | .47   | .47  | .45    | .43    | .27      | -.02  |
| A. Toney        | .52     | .53    | .51   | .46  | .43    | .40    | .34      | -.08  |
| B. Jones        | .61     | .58    | .58   | .54  | .53    | .47    | .53      | -.05  |
| S. Mix          | .70     | .56    | .52   | .52  | .51    | .48    | .36      | -.02  |
| D. Dawkins      | .88     | .73    | .71   | .62  | .57    | .58    | .51      | -.14  |
| Mean =          | .56     | .53    | .54   | .52  | .51    | .50    | .46      | -.04  |

*Note: x = a hit; o = a miss. r = the correlation between the outcomes of consecutive shots*
Representativeness

Application

◆ house prices had been going up steadily for many years

◆ representativeness may have strengthened the belief that they would keep rising
Overconfidence

♦ people overestimate the precision of their forecasts

♦ e.g. ask people to forecast a quantity
  — but also to give a 95% confidence interval

♦ the interval contains the realized value only about 60% of the time

*Application*

♦ overconfidence may have led people to believe that they could forecast future house price movements more accurately than they could
Optimism

♦ people have excessively rosy views of their prospects

♦ in surveys, people think setbacks are more likely to happen to other people than to them
  — getting divorced, having a drinking problem, having a car accident, getting prostate cancer, etc.

Application

♦ households may have underestimated the risks of taking on a large mortgage
there are two widely-heard views of the financial crisis
- the “bad incentives” view and the “bad model” view

here, we suggest an alternative view:
- on some level, banks were aware that there were problems with the business model
- but as a result of a variety of psychological forces, they deluded themselves into thinking that everything was OK
- cognitive dissonance, conformity, groupthink, obedience

we also discuss the psychological forces that may be relevant to:
- the absence of trading in some debt markets (trust, ambiguity aversion)
- the firm belief that house prices would keep on rising (representativeness, overconfidence)
- the willingness of households to take out excessively large loans (representativeness, optimism)