



# Why is Risk-based Decision Making Hard?

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# How representative thinking plays out

**One with symptoms, advised to get a mammogram. 15% chance pre-test**



**One with no symptoms goes for screening mammogram. .4% chance pre-test**





October 11, 2019

# How likely is breast cancer for each?

- Very different probabilities.
  - ✧ For a woman without symptoms, the probability is about 12%.
  - ✧ For a woman with symptoms, the probability is about 80%.
  - ✧ 50% of MBAs and 10% of GPs said they were equal. “Pre-test information is not relevant”



# Should investors worry about this?

- “The root cause of the financial crisis that erupted in 2008 is psychological....Heuristics, biases, and framing effects strongly influenced the judgments and decisions of financial firms, rating agencies, elected officials, government regulators, and institutional investors.” Hersh Shefrin, 2009
- Representativeness leads investors to label an investment as good or bad based on its recent performance, ignoring past performance. Baker and Riccaridi, 2014
- Recent book on this: “The Psychology of Investing” by N. Nofsinger, 2017, Routledge Publishing



# What can we do?

- Actively use analytical processes – analysts often bypass these, relying on ‘intuitive statistics’ instead.
- Actively try to prove yourself wrong
  - ✧ Enlist a ‘devil’s advocate’
  - ✧ How consistent is available information with the hypothesis you think is wrong?





# Thank you!



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