Meir Statman - "Finance for Normal People: How Investors and Markets Behave," Oxford University Press

Instructor Manual

This instructor manual accompanies the Finance for Normal People book. It includes questions and answers in "teaching notes." The student manual accompanying the book includes only the questions.

You can use the book and manual in behavioral finance courses for undergraduate and graduate students, and also in courses for financial professionals. You can also use portions of the book and manual as supplements in general finance courses, such as investments and corporate finance courses.

Some answers draw directly from the chapters. Others ask students to explore materials beyond the chapters, directing them to the Internet and youtube clips. Yet others are problems with accompanying excel sheets. Excel sheets, like the manual, come in two versions, a student version available to students and an instructor version available to you, containing the solutions.

Some questions outline experiments you can conduct in class. Be aware, however, that outcomes of these experiments will often diverge from outcomes reported in the literature. Experiments reported in the literature follow protocols where experimenters know the purpose of an experiment but subjects do not. For example, questions that matter to experimenters are often asked along with other questions that do not matter, so subjects remain unaware of the purpose of experiments. You would not be able to replicate experiments reported in the literature because the context of the course alerts students to the nature of the experiment and put them on guard.

The instructor manual also includes a sample syllabus I use in my behavioral finance course. I ask students to submit answers to some manual questions and also write term papers. The syllabus contains a range of term-paper topics as examples, but I encourage students to think about other topics they wish to explore.

Guest speakers from the field of finance greatly enrich the course. Speakers include financial advisers and consultants, money managers, corporate managers, and financial entrepreneurs. I ask guests to speak about their work for the first 30 minutes or so of a session, leaving much time to Q&A. I do not ask guest speakers to link their talks explicitly to behavioral finance. Your students and you can link guest speakers' talks to behavioral finance during the Q&A portion of the session or during the following session.

Chapter 1 – Normal People

1. What are the differences between “rational” people and “normal” people?

2. What are the differences between cognitive and emotional shortcuts and cognitive and emotional errors?

3. What are the differences between System 1 and System 2?

4. A person prefers a stock with $40 capital appreciation and $20 dividend over a stock with $60 capital appreciation. Is she rational? Is she normal-smart? Is she normal-foolish? Is she normal-knowledgeable? Is she normal-ignorant? Why?

Teaching note: The preference is not rational unless a stock with $40 capital appreciation and $20 dividend adds to her wealth more than a stock with $60 capital appreciation. This might happen if the sum of taxes and transaction costs on the first option are lower than on the second. The preference is normal, however, and can be smart or foolish, knowledgeable or ignorant.

Assume, for simplicity, that the sum of taxes and transaction costs in the two options is the same. The preference is normal-smart if she needs $20 for spending today and is afraid that weak self-control might make it difficult for her to resist temptation to sell more than $20 worth of stock, depriving herself of retirement savings. Money received in the form of dividends bolsters self-control when accompanied by a rule permitting to spend dividends but restricting dips into capital by selling stocks and spending their proceeds.

The preference is normal-knowledgeable if she knows that the two options are identical in substance, even though different in form.

The preference is normal-ignorant if she thinks, in ignorance, that the two options are different in substance, such as thinking that money in the form of dividends is less risky than money in the form of capital or capital appreciation.

5. Is recoiling from a rubber snake a cognitive or emotional shortcut? Is it a cognitive or emotional error? How is it related to the operations of System 1 and System 2?

Teaching note: Recoiling from a real snake is an emotional shortcut, manifesting the wisdom of using System 1. Recoiling from a rubber snake is also an emotional shortcut, manifesting the wisdom of using System 1. People recoiling from rubber smakes have no time for using System 2 to examine whether the snake is real or made of rubber. The costs of not recoiling when a real snake is present are greater than the costs of not recoiling when the snake is non-poisoneous or made of rubber.

Consider getting rubber snakes and surprising students by tossing the snakes toward them. Discuss their reaction.

You can buy rubber snakes on Amazon: https://www.amazon.com/Rubber-RAINFOREST-Figures-Anaconda-Constrictor/dp/B002UQ39EQ?ie=UTF8&redirect=true&ref_=ya_st_dp_summary

6. Watch the elevator floor clip: https://www.youtube.com/watch?v=6Q3dHnkrLZI

   What does it teach us about the operations of System 1 and System 2?

Teaching note: This is similar to the earlier snake example in showing the operations of System 1 and System 2.

7. What are the answers to the following 3 questions, and what do they teach us about the operations of Systems 1 and 2? What are the answers to each by System 1 and what makes System 1 so tempting and misleading in this case?

   A. A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost? _____ cents

Teaching note: The correct answer is 5 cents. System 1 leads to 10 cents, as it seems intuitive that the answer calls for subtracting $1 from $1.10.

   B. If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets? _____ minutes

Teaching note: The correct answer is 5 minutes. System 1 leads to 100 minutes. This is a good example of how an unfamiliar setting can mislead. Think of the analogous question in a familiar setting: If it takes 9 women 9 months to bring to term 9 babies, how long would it takes 100 women to being to term 100 babies?

C. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake? _____ days

Teaching note: The correct answer is 47 days. Using System 1 leads to 24 days. There is an analog here in the tendency to use arithmetic growth when geometric growth is correct. Think of an analogous question: How much would you have in your account is you start with $100 earning 10% each year for 100 years? $1,378,061

8. Can people be trained or educated to identify when System 1 misleads and use System 2 instead? Specifically, can people be trained or educated to react best in an earthquake? Can people be trained or educated to react best when an active shooter is on the scene?

Teaching note: In some situations, training can make System 2 solutions part of System 1 actions. Training involves acquisition of rules and procedures, reinforced through exercises, so they become automatic, part of System 1.

See for example, a Department of Homeland Security brochure "ACTIVE SHOOTER HOW TO RESPOND" https://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf

Good practices for coping with an active shooter situation

- Be aware of your environment and any possible dangers
- Take note of the two nearest exits in any facility you visit
- If you are in an office, stay there and secure the door
- If you are in a hallway, get into a room and secure the door
- As a last resort, attempt to take the active shooter down. When the shooter is at close range and you cannot flee, your chance of survival is much greater if you try to incapacitate him/her. CALL 911 WHEN IT IS SAFE TO DO SO!

9. Consider the following advice about what to do if you skid or lose traction on an icy road: "Stay calm. Black ice is often, although not always, patchy. Use the minimum amount of braking possible." Would you be able to follow this advice? Refer to the operations of System 1 and System 2. How is an Automatic Braking System (ABS) related to the operations of System 1 and System 2?

Teaching note: This is a good example of where training is not likely to be effective, as correct action requires an extremely quick switch from System 1 to System 2 and extremely quick

coordination of eyes, hands, and foot, in a way contrary to the intuition of System 1. In this case, an Automatic Braking System (ABS) in a car does System 2 work automatically, overruling the driver's System 1.

10. Read "Can These Apps Stop You From 'Drunk Texting'?"
    http://www.wsj.com/articles/can-these-apps-stop-you-from-drunk-texting-1453774275?cb=logged0.2734328790102154

    What does it teach us about methods for overruling System 1 and prompting use of System 2?

Teaching note: This is similar to the ABS question above.

11. Watch the Candid-Camera elevator clip:
    https://www.youtube.com/watch?v=BgRoiTWkBHU
    What does it teach us about the operations of System 1 and System 2?

Teaching note: System 1 inclines us to imitate others – join the herd. In this case it does little harm. Indeed, joining the herd is beneficial in most cases, such as choosing to eat what our parents eat, or dressing as others do.

12. Watch the CFP commercial: https://www.youtube.com/watch?v=yJFrkNY4n1g

    What does it teach us about the operations of System 1 and System 2?

Teaching note: The commercial offers a good illustration of how System 1 can mislead.

13. Read the introduction to Malcolm Gladwell's book, Blink.
    http://www.oknovels.com/blink-power-thinking-without-thinking

    Read also Eric Jaffe's column "Challenging Gladwell's Blink"
    https://www.psychologytoday.com/blog/headcase/201006/challenging-gladwells-blink,

    and Graham Bowley and Colin Moynihan's article "Knoedler Gallery Heads to Trial in Sale of a Fake Rothko,"

    http://www.nytimes.com/2016/01/25/arts/design/knoedler-gallery-heads-to-trial-in-sale-of-a-fake-rothko.html?_r=0

What do they teach us about operations of System 1 and System 2?

Teaching note: These writings teach us to be careful before concluding that the “blink” System 1 is superior to the “think” System 2. Confirmation errors have led Gladwell to conclude, too generally, that the “blink” System 1 always leads to correct answers.

14. Here are two examples of System 1 intuition replaced by System 2 knowledge, indicating that we can learn and transform ourselves from ignorant to knowledgeable:
    a. Miasma – the theory that diseases are caused by "bad air". Replaced by germ theory of disease.
    b. Phlogiston – The theory that combustible goods contain a substance called "phlogiston" which entered air upon combustion. Replaced by knowledge about oxidation

    Please list additional examples, including ones where knowledge is still developing and debated, such as the causes of 2008 Great Recession.

Teaching note: The earth is round, not flat. The earth revolves around the sun, not the sun around the earth. People still debate whether global warming is occurring, whether vaccination causes autism, whether electromagnetism causes cancer, and whether we would be better off if we return our currency to the gold standard. But useful debate must rely on System 2.

15. Here are some example of financial-facts knowledge:
    a. Knowing the benefits of diversification
    b. Knowing how to calculate compounding interest rates
    c. Knowing the difference between mutual funds and exchange traded funds (ETF)

    What are some additional examples of financial-facts knowledge?

Teaching note: Knowing how to calculate the value of an option, knowing the difference between mutual funds and closed end funds, knowing the association between bond prices and yields.

16. Which of the following are examples of exclusively-available, narrowly-available, or widely-available information? What additional information would you need to classify

each example as exclusively-available, narrowly-available, or widely-available information?

1. The Chair of the Federal Reserve Bank decided to raise interest rates
2. The FBI is about to raid the home of a CEO accused of fraud
3. A hedge fund manager decided to buy a stock
4. An analyst at a brokerage firm decided to downgrade a stock
5. A company sent the SEC a report detailing transactions of its shares by insiders
6. The SEC published the report on its website two days after the company sent its report
7. Report about new software that would make driverless cars safer appeared in *Communications of the ACM*, the magazine of the Association of Computing Machinery
8. Report about the same software appeared a month later in *The Wall Street Journal*
9. Report about the same software appeared on CNBC, two months later

Teaching note: This is a good place to emphasize that levels of information knowledge are on a continuous scale. We simplify the scale by dividing information knowledge into three groups. Point 1 above can be classified as exclusively-available information if the Chair of the Federal Reserve Bank did not share her decision to raise interest rates with others at the Fed or outside it. Or it can be narrowly-available information. Classification of 2-5 is similar to the classification of 1. 6 makes 5 widely-available, but not as widely available as when published in the *New York Times*. 7 is narrowly-available information, made widely-available in 8 and 9.

Chapter 2 - Wants for utilitarian, expressive, and emotional benefits

1. Can you tell the difference between satisfying wants and committing cognitive or emotional errors? How would you do that?

    a. Do you regard buying a Super Bowl ticket for $5,000 as satisfying wants or committing cognitive or emotional errors? What does your answer depend on?

    b. Do you regard spending all your income now and failing to save for retirement as satisfying wants or committing cognitive or emotional errors? What does the answer depend on?

Teaching note: These two examples are a good beginning for a more general discussion of differences between wants and errors. Either can be described as a want or error. Students are likely to see the difference from their own perspective, such as considering failure to save as an error, but should be able to see it from another person's perspective where failure to save is a want.

Does it matter if the person is poor, barely able to sustain his family now, and has nothing left for retirement savings? Does it matter if he earns a good income now but likes to spend it all? Does it matter if he earns a good income now but expects a large inheritance?

2. A person prefers a stock of a company that contributes to cleaning the environment and has an expected return of 8%, over a stock of a company that pollutes the environment and has an expected return of 10%. Is she rational? Is she normal-smart? Is she normal-foolish? Discuss with reference to cognitive and emotional errors, wants, and tradeoffs among wants.

Teaching note: By Miller and Modigliani's definition of rational investors as those who "always prefer more wealth to less…" she is not rational, as she is sacrificing 2% expected return and corresponding wealth. But she is normal, trading her wants for the utilitarian benefits of wealth for her wants for the expressive and emotional benefits of staying true to her values.

She is normal-knowledgeable if she avoids cognitive and emotional errors. For example, if she has considered and rejected the alternative of investing in the stock of a company that pollutes the environment and contributing the extra 2% to environmental causes, perhaps because that alternative imposes on her the emotional cost of hypocrisy. In addition, she avoids cognitive and emotional errors when she searches but does not find a company that cleans the environment yet has a 10% or higher expected return. Otherwise, she is normal-ignorant and likely normal-foolish.

3. A day-trader trades 40 times a day, earning a 4% annual return, whereas investors who buy and hold a broadly diversified index fund earn 6%. Is he rational? Is he normal-knowledgeable? Is he normal-ignorant? Is he normal-smart? Is he normal-foolish? Discuss with reference to cognitive and emotional errors, wants, and tradeoffs among wants.

Teaching note: The discussion is similar to the one in the earlier question. In this case the expressive and emotional benefits are the thrill of trading and having the image of an "active" investor.

He is normal-knowledgeable and normal-smart if he avoids cognitive and emotional errors and if he knows the tradeoff between his wants and chooses the tradeoff that is best for him, if he cannot find a less expensive alternative for the thrills and image he wants, and if he cannot find a way to reduce his trading losses without reducing the expressive and emotional benefits he derives from trading. Otherwise, he is normal ignorant and likely normal-foolish.

4. Look at advertisements in *Money* magazine, commercials on CNBC, or other places where financial companies promote their products and services. What wants do they address and aim to satisfy? Describe each advertisement and commercial. For example, Vanguard had the following advertisement on its website:

   "At Vanguard, the only bottom line that matters is *yours.*" It shows a mother reading a book to a toddler. This advertisement addresses our want for investing in our children and families.

Teaching note: Ads focusing on returns and their implied utilitarian benefits might well be most common, but ones that address wants for nurturing children and families might also be frequent. Ads that address other wants, such as being true to one's values, are likely less frequent.

5. The following is a list of wants, arranged alphabetically. They are answers to "why is wealth important to you?" How would you rank them by their importance to you? Why? Which of these wants are easy to admit to others and yourself, and which are more difficult? Why? (e.g. Is it easier to admit that wealth is important to you for educating your children than for increasing your social status?)

   a. Allowing me to meet interesting people

   b. Buying the things I really want

   c. Educating my children

d. Having an impact on causes I care about

e. Helping my children become successful

f. Helping the less fortunate

g. Increase my social status

h. Leaving a legacy

i. Opening new opportunities and experiences

j. Providing financial security

k. Serving as a barometer of my success

Teaching note: High net worth people ranked "providing financial security" first, followed by "educating my children," "helping my children to be successful," and "helping the less fortunate." Ranking is likely to vary by group (e.g. undergraduates, executives, people in their 60s). This is a good place for a discussion about wants, and also about wants that are easy to admit, such as "helping the less fortunate" and those that are difficult to admit, such as "increasing my social status."

6. We have been nurtured as children and want to nurture our children and families. How did your parents nurture you with financial resources, and how do you nurture or hope to nurture your children and family? Did you parents pay all your college expenses? Did they expect you to work during your college years? Do you expect an inheritance when the time comes? How did your parents invest in you beyond money (e.g. teaching to read, teaching to ride a bicycle or drive a car?)

   Read the views about paying for children's college education in http://www.wsj.com/articles/SB10001424052702304815004579417262095065046

   What is your view?

Teaching note: This is a good way to raise the question "what is money for?" and see that money is only a way station to satisfying wants.

7. People everywhere want to increase their social status, but status symbols vary by culture from one country to another and from one group in a country to another. Luxury cars can be a main status symbol in one country, while university degrees, fancy weddings, or charitable contributions, can be more important status symbols in others.

What are status symbols in your social group? What are status symbols in your country? What do you know about status symbols of other groups in your country and in other countries?

Teaching note: This discussion can show that status seeking is common, although not always acknowledged. It can be used to emphasize that money is often accumulated for status and traded for status. A person who contributes $100 million to a university would see her name on a building. She trades the utilitarian benefits of money for expressive emotional benefits, including those of high social status.

It is also interesting to discuss status displays that look like a "reverse status symbol," as when a rich person chooses an inexpensive watch. This is an especially good opening for a discussion where there are some students who grew up in other countries or belong to different socioeconomic groups.

8. How do we use investments to satisfy wants for high social status? Look up on the Internet and elsewhere items about investment in movies, theater, art, stamps, musical instruments, private banking, qualifying as an "accredited investor." Which of these investments appeal to you and which do not? Why?

   Read:

   http://www.hec.edu/Knowledge/Finance-Accounting/Financial-Markets/Is-it-profitable-to-invest-in-wine

   http://www.cheatsheet.com/personal-finance/why-invest-in-stocks-when-you-can-buy-a-case-of-wine.html/?a=viewall

   http://www.bordeaux-traders.com/wine-investment/why-invest-in-wine/

   https://www.gsb.stanford.edu/insights/research-art-good-investment

   http://www.forbes.com/sites/kathryntully/2012/10/05/is-art-an-asset-or-an-investment/#2bcc58793b35

   http://www.marketplace.org/2010/12/30/business/considering-housing-consumption-not-investment

   http://www.wsj.com/articles/SB10001424127887323949904578538012957595402

Teaching note: This question complements the one above in a discussion about the role of status-seeking in investing.

9. Wants are likely related to personality, measured by the "Big 5" personality traits. They are:

    a. Openness to experience

    b. Conscientiousness

    c. Extraversion

    d. Agreeableness

    e. Neuroticism

    For example, a preference for familiar investments might be related to conscientiousness, and a willingness to consider unfamiliar investments might be related to openness to experience. Wants are also likely related to your "moral foundations." These are related to political leanings toward liberalism and conservatism. There are 5 psychological foundations of morality:

    a. harm/care

    b. fairness/reciprocity

    c. ingroup/loyalty

    d. authority/respect

    e. purity/sanctity

    The want for fairness might be related to fairness/reciprocity, and wants for socially responsible investing might be related to harm/care.

    Go to http://www.yourmorals.org/ and assess your own personality and moral foundations. How are they related to wants?

Teaching note: Think about patriotism as a reflection of ingroup/loyalty and preference for investing in one's own country. You can also mention the link between conscientiousness and self-control that are discussed in Chapter 4.

Students are likely to find it interesting to find their own personalities and moral foundations beyond the context of finance.

You might also wish to look up an ddiscuss the following paper, "CEO Personality and Firm Policies." Students will see how personality matters in a corporate finance setting

Gow, Ian D. and Kaplan, Steven N. and Larcker, David F. and Zakolyukina, Anastasia A., CEO Personality and Firm Policies (July 6, 2016). 6th Miami Behavioral Finance Conference; Stanford University Graduate School of Business Research Paper No. 3444; Chicago Booth Research Paper No. 16-13; Fama-Miller Working Paper; Rock Center for Corporate Governance at

Stanford University Working Paper No. 220. Available at SSRN: http://ssrn.com/abstract=2805635

10. All products and services have "personalities," reflecting utilitarian, expressive, and emotional benefits the provide, and wants they satisfy. Think about Apple, Lenovo, Harley Davidson, Hyundai, Neiman-Marcus, and K-mart. For example, Apple laptops and Lenovo laptops provide the same utilitarian benefits but Apple is likely to seem "up to date" and perhaps "upper class" in its expressive and emotional benefits, whereas Lenovo is likely "down to earth" and perhaps "tough." Now think of the following investments: individual stocks, stock mutual funds, bond mutual funds, index funds, hedge funds, gold, and real estate. What is the personality of each investment? Which descriptors, such as from the list below are most closely associated with each investment?

    Down-to-earth

    Daring

    Reliable

    Upper class

    Outdoorsy

    Honest

    Spirited

    Intelligent

    Charming

    Tough

    Wholesome

    Imaginative

    Successful

    Cheerful

    Up-to-date

Teaching note: This too, is a good opening for a discussion. Is owning real-estate down-to-earth? Is it outdoorsy? Imaginative? Discussion about the personality of investments and the people whose wants they satisfy are likely to go much beyond these descriptors.

The book “The Gunning of America: Business and the Making of American Gun Culture,” by Pamela Haag is a fascinating example of adding expressive and emotional benefits to utilitarian benefits. See http://www.wsj.com/articles/american-gun-cultures-commercial-origins-1461335155 and the comments section.

11. Search for discussions about “day trading” on the Internet and elsewhere. For example:

    http://www.tradingacademy.com/ptw.aspx?CampaignID=70140000000NkNQ&CampaignCode=GMAD35G00SP&ef_id=1502c140-e11a-02e8-0253-000033cf93ad&src=goppc&gclid=CLqWsvXc_MsCFUiPfgodnPMKjg

    http://www.sec.gov/investor/pubs/daytips.htm

    http://techcrunch.com/2013/11/02/12-or-13-things-i-learned-about-life-from-day-trading-millions-of-dollars/

    https://www.youtube.com/watch?v=bMORAZvPWtY

    What utilitarian, expressive, and emotional benefits does day trading provide? What wants does it satisfy? Why does day trading appeal or not appeal to you and people you know?

Teaching note: Do any of your students day trade or know people who day-trade, or even just trade frequently? Can they place themselves in the shoes of those who trade frequently? This is also a place to discuss the differences between wants and errors, between normal-knowledgeable and normal-ignorant, and between normal-smart and normal-foolish.

Normal-ignorant investors exaggerate their performance, such as by not counting unrealized losses. But knowledgeable investors can be normal-smart if they are willing to trade the utilitarian benefits of higher profits for the expressive and emotional benefits of playing and winning.

12. Read https://www.psychologytoday.com/blog/positively-media/201208/video-games-problem-solving-and-self-efficacy-part-1

    How is the article related to our wants for demonstrating our competence? What are ways we seek to demonstrate our competence in the investment area and in other areas (e.g., sports, cooking, wood-working.)

Teaching note: It is important to see the positive in our attempts to demonstrate our competence. This is true for children who assemble Lego houses, and adults who solve puzzles. Is there a difference between demonstrating competence by solving word puzzles and solving stock puzzles?

This is also a good place for a discussion of the difference between normal-knowledgeable and normal-ignorant characteristics/behaviors. Normal-knowledgeable investors without exclusive or narrowly-available information demonstrate their competence by buying and holding low-cost index funds. Normal-ignorant investors try to demonstrate their competence by attempting to beat the market.

13. What do the following tell us about our want for being true to our values? Do you separate your wants for profits from your wants for being true to your values? Do you understand and empathize with those who do not do not separate their wants for profits from their wants for being true to their values? Read, for example:

    https://www.bogleheads.org/forum/viewtopic.php?t=13299

    http://gofossilfree.org/what-is-fossil-fuel-divestment/

    http://bdsmovement.net/activecamps/divestment

    http://www.campaign2unload.org/

    http://www.nytimes.com/2015/12/08/business/dealbook/gun-shares-have-done-well-but-divestment-push-grows.html

    http://www.morningstar.com/advisor/t/65920341/getting-religion-with-faith-based-mutual-funds.htm

    http://www.kiplinger.com/article/investing/T041-C009-S002-5-religion-funds-for-faith-based-investors.html

    http://www.wsj.com/articles/SB10001424052702304106704579135321491814430

Teaching note: These readings are a useful for a discussion about investors who incorporate their values in their investments, and those who do not. Are students willing to accept lower amounts of money as scholarships if universities suffer lower endowment returns because they divest fossil fuel companies? What about cases where not all share values, as in the BDS (Boycott, Divestment, Sanctions) movement against Israel?

14. How do our wants for fairness reflected in investment discussions? What are your views about fairness in the context of investments?

    Discussions about high frequency trading are an example of discussions about fairness in the context of investments. Here are some examples. Search the Internet and elsewhere for additional ones. What are your views about fairness in the context of investments?

    Read, for example:

http://www.thetradingmesh.com/pg/blog/mike/read/6965/hft-and-the-fairness-of-financial-markets

https://www.youtube.com/watch?v=dydgO_7aw4E

Discussions about insider trading are another example of discussions about fairness in the context of investments. Here are some examples. Please search the Internet and elsewhere for additional ones. What are your views?

http://dealbook.nytimes.com/2011/04/11/why-is-insider-trading-wrong/?_r=0

http://www.bloombergview.com/articles/2015-06-03/insider-traders-made-some-easy-money-on-stock-offerings

http://nypost.com/2015/10/05/supreme-court-rejects-insider-trading-case-in-setback-for-bharara/

http://www.nytimes.com/2016/01/20/business/supreme-court-agrees-to-hear-insider-trading-case.html

Discussions about executive salaries are an example of discussions about fairness in the context of corporations. Here are some examples. Please search the Internet and elsewhere for additional ones. What are your views?

http://rooseveltinstitute.org/beyond-fairness-skyrocketing-ceo-pay-bad-our-economy/

http://sevenpillarsinstitute.org/case-studies/the-ethics-of-executive-compensation-a-matter-of-duty

http://billmoyers.com/2015/04/21/clintons-executive-pay-comments-show-still-focused-fairness/

Teaching note: This is a good beginning of a discussion about fairness in the context of investments and finance more generally. What do people mean when they say that a behavior or situation is unfair? Discuss "fairness rights"

The following is drawn from Hersh Shefrin and Meir Statman, "Ethics, Fairness and Efficiency in Financial Markets," *Financial Analysts Journal*, 49 (1993): 21-29

"Fairness can be thought of as a claim to entitlements. We identify seven classes of financial market fairness by the entitlements they provide:

1. freedom from coercion,

2. freedom from misrepresentation,

3. equal information,

4. equal processing power,

5. freedom from impulse,

6. efficient prices and

7. equal bargaining power.

15. Consider investing in funds A and B. How would you split $100 between the two?

	Fund A	**Fund B**
Fund Segment	S&P 500 Index Fund	S&P 500 Index Fund
Fund Manager	Mustafa Sagun	William R. Andersen
About the Fund		
Size	$77.49 Million	$75.35 Million
Inception Date	02.10.1998	18.02.2005
Annual Expense Ratio	0.70%	0.64%
Trading Activity (Annual Turnover Ratio)	1.98%	2.03%
Fund Facts	The investment seeks to replicate the total return of the S&P 500 index, before fees and expenses. The fund invests primarily in common stocks issued by companies in the Standard & Poor's 500 Composite Stock Price index.	The investment seeks to replicate the total return of the S&P 500 index, before fees and expenses. The fund invests primarily in common stocks issued by companies in the Standard & Poor's 500 Composite Stock Price index.
Top Five Stock Holdings		
1	Exxon Mobil CP	Exxon Mobil CP
2	General Electric CO	General Electric CO
3	Microsoft Corporation	Microsoft Corporation
4	Chevron Corp	Chevron Corp
5	AT&T Inc.	AT&T Inc.

Teaching note: This experiment is drawn from Kumar, Alok, Alexandra Niessen-Ruenzi, and Oliver G. Spalt. "What Is in a Name? Mutual Fund Flows When Managers Have Foreign Sounding Names." *Review of Financial Studies* 28 (2015): 2281-2321.

It examines whether wants for familiarity affect investment choices. The name of William R. Andersen (Fund B) sounds familiar to Americans, whereas the name of Mustafa Sagun (Fund A) sounds foreign. Does it affect allocations to funds A and B?

You can assign this table to half the students and assign a reversed table to the other half. In the reversed table Andersen manages Fund A and Segun manages Fund B.

In countries outside the U.S. you can choose other names, one that sounds familiar and the other that sounds foreign.

16. How do our wants for paying no taxes reflected in investment discussions? Below are some examples. Please search the Internet and elsewhere for additional ones.

    http://ideas.time.com/2012/09/18/the-rich-havent-always-hated-taxes/

    http://www.thefiscaltimes.com/2015/03/03/7-Taxes-We-Hate-Most

Teaching note: You can relate the issue of taxes to the issue of fairness. You can open a discussion about why people think that some (or all) taxes are unfair. You can also open a discussion on tax avoidance as a demonstration of competence and tax cheating as reflecting wants of utilitarian benefits of money not paid as taxes and expressive and emotional benefits of ideology (e.g. "we need a smaller government.")

17. What are principal-agent conflicts and how are they related to conflicts over wants among people?

    Here are some examples. Please search the Internet and elsewhere for additional ones.

    http://www.forbes.com/sites/timworstall/2013/03/01/solving-the-principal-agent-problem-apple-insists-that-executives-must-hold-company-stock/#7f42929b7728

    http://smallbusiness.chron.com/examples-agency-problems-financial-markets-70962.html

    https://www.cfainstitute.org/learning/foundation/research/Documents/principal-agent_problem_in_finance.pdf

https://en.wikipedia.org/wiki/Dennis_Kozlowski

Teaching note: Students usually learn in a corporate finance course about principal-agent conflicts between managers as agents and shareholders as principals. This is an opportunity to expand the discussion to conflicts among money managers and investors, financial advisers and clients, and more. It is also a good place to expand the discussion to wants beyond money. Conflicts between managers and shareholders can result from managers' wants for social status, such as being recognized for donating company money to charities that award them honors.

Chapter 3 – Cognitive shortcuts and errors

Framing shortcuts and errors

1. Surgeons get better at surgery when they perform many surgeries. Automobile mechanics get better at fixing cars when they fix many cars. Students get better grades when they study hard. Framing trading as equivalent to surgery, car fixing, and studying is a framing shortcut. Why can it lead to a framing error? Why might traders not get better at trading even when they perform many trades?

Teaching note: People naturally frame trading as equivalent to surgery, but the human body does not change to gain an advantage over the surgeon – It does not move the heart from left to rights. Yet the trader on the other side of our trade changes to gain advantage, such as by acquiring narrowly-available information. Studying might offer a better frame for trading if the teacher grades on a curve, becase your grade now depends also on the grades of competing students. It is not sufficient to study hard. You have to study *harder* than others, the analog of acquiring more narrowly-available information.

Frames in mental accounts

2. Do you distinguish money earned with effort from money you receive as a gift?

   Does "easy come, easy go" describe your behavior?

   Do you use mental accounts to keep track of spending and control it? How do you use them?

Teaching note: These questions are a good opening for a general discussion. Some may well claim, truthfully, that they make no distinctions by source of money. Others would likely differ, generating an insightful discussion.

Framing and the winner's curse

3. What is the winner's curse and how is it related to framing?

   The winner's curse can occur in a "sealed first-price auction," also known as a "blind auction," and as "first-price sealed-bid auction." How is this type of auction different from an "English auction," also known as "open ascending price auction"? How does an English auction protect bidders against the winner's curse?

Teaching note: Place a combination of large paper clips and small paper clips in a jar. You (the experimenter) know the number of large clips and small clips but students do not know. Assign money values to the clips, such as 5 cents for large and 2 cents for small. You know the total value of the clips but students don't know it. The high bidder gets the difference between the value of the clips and his or her bid (e.g. if he bids $12 and the value of the clips is $20 he gets $8. But if he bids $25 he pays $5). Tell students how many bidders participate. You can do the same with coins or marbles in place of paper clips. You can do a similar experiment with an English auction and discuss the difference in procedures and outcomes.

Adapted from Max H. Bazerman and William F. Samuelson, "I Won the Auction but Don't Want the Prize," *The Journal of Conflict Resolution*, Vol. 27, No. 4 (Dec., 1983), pp. 618-634.

Framing in money illusion

4. Consider two women, Ann and Barbara, who graduated from the same college a year apart. Upon graduation, both took similar jobs with publishing firms. Ann started with a yearly salary of $50,000. During her first year on the job there was no inflation, and in her second year Ann received a 2% ($1,000) raise in salary. Barbara also started with a yearly salary of $50,000. During her first year on the job there was 4% inflation, and in her second year Barbara received a 5% ($2,500) raise in salary.

   As they entered their second year on the job, who was doing better in economic terms? Ann or Barbara? Why?

   As they entered their second year on the job, who do you think was happier? Ann or Barbara? Why?

   As they entered their second year on the job, each received a job offer from another firm. Who do you think was more likely to leave her present position for another job? Ann or Barbara? Why?

5. Suppose Adam, Ben, and Carl each received an inheritance of $200,000, and each used it immediately to purchase a house. Suppose that each of them sold the house a year after buying it. Economic conditions, however, were different in each case:

   When Adam owned the house, there was a 25% deflation—the prices of all goods and services decreased by approximately 25%. A year after Adam bought the house, he sold it for $154,000.

   When Ben owned the house, there was no inflation or deflation—prices had not changed during that year. He sold the house for $198,000.

   When Carl owned the house, there was a 25% inflation—all prices increased by approximately 25%. A year after he bought the house, Carl sold it for $246,000.

Please rank Adam, Ben, and Carl in terms of the success of their house-transactions. Assign '1' to the person who made the best deal, and 3 to the person who made the worst deal. Why do we reach this conclusion?

(Derived from Eldar Shafir, Peter Diamond and Amos Tversky, "Money Illusion," *Quarterly Journal of Economics*, 112 (1997): 341-374.)

Teaching note: The context of the questions (e.g., in a class about behavioral finance) is likely to alert students to guard against money illusion. But the questions are useful in illustrating money illusion, and perhaps alerting students to guard against money illusion in other contexts.

Hindsight shortcuts and errors

6. Search the Internet and elsewhere for forecasts of returns of stocks, bonds, gold, and other investments, made in foresight earlier. How accurate are they when judged today, with hindsight? What do they teach us about hindsight shortcuts and errors? See, for example:

   http://www.barrons.com/articles/stocks-could-rise-10-in-2016-according-to-market-strategists-1449899461

   http://247wallst.com/investing/2015/12/15/2016-stock-market-outlook-from-14-top-wall-street-strategists/2/

Teaching note: You might wish to create a questionnaire at the beginning of the course, asking students about their forecast of the S&P 500 Index at the end of the course, or at some specified date during the course. (Provide current level of the index). Ask them also for 90% confidence intervals around their estimate, for use later in the discussion about overprecision. Someone's estimate would prove to be most accurate. You can also use it as an illustration of availability errors and confirmation errors – if people pick only the accurate forecasts because it is readily available or because they serve as confirmation of a belief that it is easy to see the future in foresight.

6. The price of a share of Plum at the beginning of 2015 was $20 and its price at the end of 2015 was $23. The return of the S&P 500 Index during 2015 was 1%. Imagine that investing in the S&P 500 Index is the alternative to investing in Plum shares. What would have been the price of a share of Plum at the beginning of 2015 if investors have seen in foresight at that time what they see in hindsight at the end of 2015?

Teaching note: The answer is $22.77. A 1% return, equal to the return of the S&P 500 Index, would have increased the price of Plum from $22.77 at the beginning of 2015 to $23 at the end of 2015. The fact that the actual price was only $20 at the beginning of 2015 implies that investors, as a whole, did not see in foresight what they see in hindsight. If they did, they would have rushed to buy shares of Plum at the beginning of 2015, pushing their price up to $22.77.

Anchoring and adjustment shortcuts and errors

7. Valuation of a house by comparable houses (comps) is a good example of the use of anchoring and adjustment shortcuts. Read:

   http://www.zillow.com/wikipages/All-About-Comps/

   Select a house, your own or another one. Go on Zillow.com and describe how Zillow valued it.

Teaching note: Ask students to present their estimates. Engage them in a discussion about why the estimates are good or poor. Did they choose the right houses to serve as anchors? Did they adjust properly for factors not included on the list (e.g. litigious neighbors.)

8. The S&P 500 Index increased at an annualized rate of 5.836% during the 90 years from the end of December 31, 1925 to the end of December 31, 2015. The S&P 500 Index does not include dividends and their reinvestment.

   Suppose that you invested $1,000 in the S&P 500 Index at the end of December 31, 1925. You would have had $162,820 by the end of December 31, 2015 if you spent all dividends when you received them during the period. 1,000 x (1+0.05836)**90=$162,820.

9. Now suppose that you invested $1,000 in the S&P 500 Index at the end of December 31, 1925, and reinvested the dividends during the entire 90-year period, rather than spend them. The annualized rate when dividends and their reinvestment are included during the period was 9.980%.

   What is your guess (not calculation) of the amount you would have had at the end of December 31, 2015? Now calculate the amount. How similar is the calculated amount to your guessed amount?

Teaching note: The answer is $5,226,780 1(1+0.09980)**90=$5,226,780. This amount is higher than $162,820 by a factor of 32. Is your estimate much lower than $5,226,780? If so, you might

have been misled by anchoring and adjustment errors. You were anchored to the $162,820 amount and did not adjust your estimate sufficiently to arrive at $5,226,780.

You can create additional examples by using the calculator at http://dqydj.net/sp-500-return-calculator/

Representativeness shortcuts and errors

10. Imagine that you toss a coin 20 times in a row. Write down your guess of a typical sequence of heads and tails (Mark H for heads and T for tails).

    Now toss a coin 20 times in a row and write down the outcome of each toss as H or T.

    Compare the number of "reversals" in the guessed toss and the actual toss. A reversal is H followed by T, or T followed by H. For example, HHHTTH has 2 reversals.

    How does the number of reversals in your guessed sequence differ from the number of reversals in your actual sequence? What does the difference tell you about what we see as representative of a random sequence?

Teaching note: We are misled by representativeness errors to expect more reversals in a random sequence than occur in actual sequence. This is an example of "gamblers' fallacy." The "hot-hand fallacy," another form of representativeness errors, misleads us to expect continuations rather than reversals when the series is random. Here, our intuition tells us to expect reversals because we know that outcomes of coin tosses are independent. But our intuition misleads us into expecting more reversals than are likely to occur.

11. Gallup conducted monthly surveys of the expectations of individual investors. In the accompanying excel sheet "Gallup Students" you have the mean stock returns *expected* by individual investors during the *following* 12 months. You also have the *actual* returns of the S&P 500 Index during the *preceding* and *following* 12-month periods.

    a. Find, using regression, the association between the mean stock returns expected by individual investors during the following 12 months and the actual return during the *preceding* 12 months. What association do you see? How strong is the association? (What is the R-Squared?). Draw the regression line and scatter diagram.

    b. Find, using regression, the association between the mean stock returns expected by individual investors during the following 12 month and actual returns during the *following* 12 months. What association do you see? How strong is the

association? (What is the R-Squared?). Draw the regression line and scatter diagram.

c. What do the results of a. and b. tell us about what influences the return forecasts of individual investors, and how accurate their return forecasts are? How are your finding related to the hot-hand and gambler's fallacies?

Teaching note: You have the instructor version of the excel sheet, "Gallup Instructors." You'll see a relatively large R-squared between the preceding 12-month actual returns (X variable) and expectations of future 12-month returns (Y variable). High preceding returns are associated with expectations for high following returns, and the association is relatively strong. You'll see a relatively small R-squared between expectations of following 12-month returns (X variable) and actual following 12-month returns (Y variable). Expectations for high following returns are associated with low actual following returns, but the association is relatively weak.

12. Which of the following is more likely, a or b? Why?

    a. A war between the U.S. and Iran

    b. Neither the U.S. nor Iran intended to attack the other, but Israeli Air Force jets blew up nuclear facilities in Bushehr, Fordow, and Natanz. Iran responded with a barrage of Hezbollah rockets in northern Israel and Hamas rained rockets on Tel Aviv. American embassies were torched in Paris and Berlin, and the American ambassador in Japan was assassinated, drawing the U.S. into a war with Iran.

Teaching note: Students might find B more likely because its path of events is detailed and seems representative of reality, whereas A seems cut and dried. Of course, if B is correct so is A. Moreover, A is more likely than B because a war can follow many different paths of events. More generally, detailed descriptions seem more representative of reality than less detailed descriptions.

13. A certain town is served by two hospitals. In the larger hospital about 45 babies are born each day, and in the smaller hospital about 15 babies are born each day. As you know, about 50% of all babies are boys, but the exact percentage varies from day to day. Sometimes it is higher than 50%, sometimes lower.

    For a period of 1 year, each hospital recorded the days on which more than 60% of the babies born were boys. Which hospital do you think recorded more such days?

    a. The larger hospital

b. The smaller hospital

c. About the same (that is, within 5% of each other)

Teaching note: The correct answer is b but many are likely to choose c. People are misled by representativeness to overlook sample size. The smaller hospital is more likely to have more "extreme" days in the same way that it is more likely that sequences of 6 tosses of a coin would yield greater deviations from equal proportions of heads and tails than sequences of 60 or 600 tosses. Tversky and Kahneman referred to it as the "belief in the law of small numbers," a tongue-in-cheek analog to the robust law of large numbers that predicts that deviations of proportions of tosses from 50-50 heads and tails become smaller as the sample grows larger.

Adapted from Amos Tversky and Daniel Kahneman, "Judgment under Uncertainty: Heuristics and Biases," in Daniel Kahneman, Paul Slovic, and Amos Tversky (eds.), Judgment under Uncertainty: Heuristics and biases, Cambridge University Press, 1982, 3-20 (p. 6)

14. Examine the series of daily prices of Peach's shares in the accompanying excel sheet "Peach Students." Graph daily prices on Y axis and days on X axis. Does the series look random or does it seem to represent a pattern?

    Now convert the daily prices of Peach's shares into daily returns. (Daily return is (P2-P1)/P1 – 1, where P1 is the price on one day and P2 is the price on the following day.) Graph daily returns on the Y axis and days on the X axis. Does the series look random or does it seem to represent a pattern?

    What do the two graphs teach us about representativeness shortcuts and errors? What do they teach us about framing shortcuts and errors?

Teaching note: You have an excel sheet "Peach Instructors" that contains the solution.

The price series seems representative of a pattern, whereas the return series reveals that the series is likely random, where past prices tell us little or nothing about future prices. "Technical analysts" are often misled into seeing patterns because they examine series of prices rather than returns.

Availability shortcuts and errors

15. Morningstar assigns 1-star ratings to the bottom 10% of mutual funds, 2 stars to the 22.5% of funds above them, 3 stars to the 35% funds above them, 4 stars to the 22.5% above them, and 5 stars to the top 10% funds.

Look through 12 issues of *Money* magazine. What are the proportions of fund advertisements with 1, 2, 3, 4, or 5 stars? What does it tell us about availability shortcuts and errors?

Teaching note: Students are likely to see that advertised funds are predominantly of the 4 and 5-star variety, exploiting availability errors.

16. Look at the testimonials at http://www.topstockpicks.com/testimonials/

    What do they tell us about availability shortcuts and errors?

Teaching note: The testimonials are all positive, making positive testimonials available to memory. Amazon, Yelp, and similar sites try to keep reviews honest, providing all reviews, positive and negative. But some merchants try to make more positive reviews available by soliciting such reviews and even compensating reviewers providing positive reviews.

Confirmation shortcuts and errors

17. We commit confirmation errors when we search for confirming evidence but overlook disconfirming evidence, and when we assign much weight to confirming evidence but little weight to disconfirming evidence.

    Consider a hypothesis that one day's stock market gains and losses are generally reversed on the following day, such that a positive return on one day is likely to be followed by a negative return on the following one, and a negative return on one day is likely to be followed by a positive one on the following day.

    Confirming evidence are positive hits and negative hits. Disconfirming evidence are false positives and false negatives.

	Tomorrow is a gain	Tomorrow is a loss
Today was a loss	positive hit	false positive
Today was a gain	false negative	negative hit

Look at the series of daily returns in column B of the accompanying excel sheet "Orange Students." The return on Day 1 was a loss (-1.51) so we forecast that we would have a gain on Day 2. The realized return on Day 2 turns out to be a loss (-1.37%) so that observation belongs in the "false positive" cell. Next, the return on Day 2 was a loss (-1.37%) so we forecast that we would have a gain on Day 3. The realized return on Day 3 was positive (1.65%) so that observation belongs in the "positive hit" cell. Please continue for all the days.

Do we have more confirming evidence than disconfirming evidence for the hypothesis? How statistically significant is the difference between confirming and disconfirming evidence? (Use the Chi-Squared test. See, for example, http://stattrek.com/chi-square-test/independence.aspx?Tutorial=AP

Teaching note: The solution is in the provided excel sheet Orange Instructors.

18. Read http://www.jasonzweig.com/turnaround-tuesday-dont-forget-black-tuesday/

    Look at the S&P 500 series of daily returns in excel sheet "Melon Students." Is the proportion of positive returns to all returns higher on Tuesdays than on other days of the week? How statistically significant is the difference between the proportion of positive returns on Tuesdays and on other days? Use the Z-score test you can find at http://vassarstats.net/propdiff_ind.html

    Now check if the mean daily return on Tuesdays is higher than the mean daily return on other days. Is the difference between mean returns statistically significant? Use the t-statistic test you can find at http://www.quantitativeskills.com/sisa/statistics/t-test.htm

Teaching note: You have the solution as provided in excel sheet "Melon Instructors."

Confidence shortcuts and errors

19. What are the 3 types of confidence and what are the differences between them?

Teaching note: Review the 3 types, overestimation, overplacement, and overprecision.

20. Overplacement and underplacement:
    a. Do you think that your skills at juggling 3 oranges places you above or below average among amateur jugglers of 3 oranges?

b. Do you think that your skills at driving a car place you above or below average among drivers of your age?

c. Do you think that your GPA places you above or below average among students in your program?

d. Do you think that your skills at selecting investments with high returns place you at above or below investors of your age and level of formal education?

Rank the tasks of juggling, driving, achieving high GPA, and selecting investments with high returns, by their difficulty, from easiest to most difficult. How is task-difficulty associated with tendencies for overplacement and underplacement?

Teaching note: Calculate the proportion of students who believe that they are above average in each task. Students, on average, are likely to judge their juggling skills below average, driving skills above average and perhaps GPA at average. Engage them in a discussion as to why they believe as they do. Is it that they tried juggling and failed? Did they consider the likelihood that others who tried likely failed? Did they drive last year with no accident or ticket? Did they consider the likelihood that others also drove last year with no accident or ticket?

21. Overestimation and underestimation:

    a. What is your estimate of the return of the S&P 500 in the following 12 month?

    b. What is your estimate of the total number of ATM machines currently in use in the U.S.? (To the nearest 1,000)

    c. What is your estimate of the current average ATM withdrawal amount in the U.S.? (To the nearest $10)

    d. What is your estimate of the number of residents in Shanghai, China? (To the nearest 100,000 residents)

    e. What is your estimate of the number of residents in Tel Aviv, Israel? (To the nearest 100,000 residents)

    f. What is your estimate of the number of residents in Brussels, Belgium? To the nearest 100,000 residents)

Teaching notes: A fair estimate of the return of the S&P 500 in the following 12 month is the current yield on 1-year Treasury bill plus 3 to 4%.

See answers to ATM questions at http://www.statisticbrain.com/atm-machine-statistics/

22. Overprecision and underprecision:

    What are the upper and lower bounds of a 90% confidence interval for each of the following? (A 90% confidence interval is one where the true value is within the interval in 9 out of 10 cases)

    a. What is your estimate of the upper and lower bounds of a 90% confidence interval for the return of the S&P 500 Index in the following 12 month?

    b. What is your estimate of the upper and lower bounds of a 90% confidence interval for the total number of ATM machines currently in use in the U.S.? (To the nearest 1,000)

    c. What is your estimate of the upper and lower bounds of a 90% confidence interval for the current average ATM withdrawal amount in the U.S.? (To the nearest $10)

    d. What is your estimate of the upper and lower bounds of a 90% confidence interval for the number of residents in Shanghai, China? (to the nearest 100,000 residents)

    e. What is your estimate of the upper and lower bounds of a 90% confidence interval for the number of residents in Tel Aviv, Israel? (to the nearest 100,000 residents)

    f. What is your estimate of the upper and lower bounds of a 90% confidence interval for the number of residents in Brussels, Belgium? (to the nearest 100,000 residents)

Teaching note: You may find the answers on the Internet and discuss the prevalence of overprecision. How important is overprecision given that one can easily find the correct answers on the Internet?

23. Consider traveling to a job interview for a job you would really like to have. On average, it takes 30 minutes to get there (including time necessary to park your car and find the office where the interview is to be conducted). The lower bound of a 99% confidence interval of travel time is 20 minutes, and the higher bound is 80 minutes. How long before the interview time do you begin to drive?

Teaching note: Questions about number of ATMs or population of cities might exaggerate the importance of overprecision errors. After all, there are likely no significant costs to an incorrect estimate of the population of Tel Aviv. Moreover, we can find the correct answer on the Internet. But questions about future return on the the S&P 500 Index indicate that overprecision errors matter. Investors with too high estimates of the future return of the S&P 500 Index and too narrow confidence bounds might be induced to invest too much in it. Overprecision errors in determining when to leave home for an important meeting or to catch a flight also matter. We are likely to leave early, leaving 1% or lower probability of missing the meeting or flight.

24. Compared to other students at your university— same age and sex as you—what do you think are the chances that the events below will happen to you?

    For each event specify your chances

    100% less (no chance) than average

    80% less than average

    60% less than average

    40% less than average

    20% less than average

    10% less than average

    Average

    10% more than average

    20% more than average

    40% more than average

    60% more than average

    80% more than average

    2 times the average (100% more than average)

    3 times the average

    5 times average

    1. Liking your post-graduation job

    2. Owning your own home

    3. Having a drinking problem

    4. Attempting suicide

    5. Divorced a few years after married

    6. Graduating in top third of class

    7. Heart attack before age 40

    8. Contracting venereal disease

    9. Being fired from a job

10. Getting lung cancer

11. Living past 80

12. No night in hospital for 5 years

13. Having a mentally gifted child

14. Weight constant for 10 years .

15. Marrying someone wealthy

Now mark each event as positive or negative. What can you say about the association between the chances that an event will happen to you and whether it is positive or negative?

Next, mark each event as relatively common or relatively rare. What can you say about the association between the chances that an event will happen to you and whether it is relatively common or rare?

Teaching note: This question can be used to start a discussion about whether we believe that "positive things would happen to us but not negative things" or whether we believe that rare things, positive or negative, are less likely to happen to us. Attempting suicide is rare, owning your own house is common.

Adapted from Weinstein, Neil D. "Unrealistic Optimism about Future Life Events." *Journal of Personality and Social Psychology* 39 (1980): 806-820.

Chapter 4 – Emotional shortcuts and errors

1. What do the following articles advise us about using emotions or avoiding them when making financial choices? Search the Internet and elsewhere for additional discussions of emotions as help or hindrance in making financial choices. What are your own views about emotions as help or hindrance in making financial choices? Do you have personal experience with emotions as help or hindrance in making financial choices, or know of the experiences of others?

   http://www.forbes.com/sites/katestalter/2016/01/16/when-investing-your-emotions-arent-necessarily-wrong/#7d3a05c02002

   http://www.financialexpress.com/article/markets/investing-set-aside-your-emotions-and-its-elementary/5116/

   http://www.coastwisegroup.com/investment-blog/231-the-psychology-of-stock-investing

Teaching note: Emotions are almost always presented as hindrances in making financial choices, but they cannot be avoided and are usually helpful. Fear is helpful if it drives us away from people who claim to offer high returns with low risk. But fear is a hinderance if it drives us to sell all our stocks after a crash.

2. Read the following:

   http://www.princeton.edu/main/news/archive/S21/79/44O45/index.xml?section=topstories and watch the associated videos. Watch also https://www.youtube.com/watch?v=J9i-9_QuetA

   What do the article and video clips tell us about our ability to read emotions and intentions in faces? Can people mislead us by their facial expressions, such as to create a false impression of trustworthiness? Reading emotions in faces is a System 1 operation. How can we use System 2 to confirm or overrule System 1 conclusions?

   What are some instances where you inferred correctly intentions from facial expressions and when you inferred intentions incorrectly?

Teaching note: This is a good opening for a discussion about the role of emotions. We see distress pain in the faces of babies and rush to comfort them. We see a smile and infer that it is safe to approach. But we can also try to deceive by faking emotions. We engage in an “arms race” trying to read emotions, knowing that they can be true or false, and presenting emotions, true or false.

3. Do the Balloon Analogue Risk Task (not the automatic one) – see below

   http://www.millisecond.com/download/library/BART/

   Assess your anger by the following scale

   http://www.psychologistworld.com/stress/angertest.php

   Read the following article.

   https://www.researchgate.net/publication/271194697_The_effect_of_anger_and_anxiety_traits_on_investment_decisions

   What did you learn about the association between anger and financial choices? Does it correspond to your experience or the experiences of others you know?

Teaching note: This question and the answers to it can be used to illustrate emotions as help and hindrance. Anger tends to bring decisiveness, helping in some settings and hindering in others. The "ultimatum game" can illustrate the role of anger, helping or hindering, as people angered by unfairness of an offer are willing to forego money when angry, to gain the emotional benefits of self-rightousness that accompanies anger, but sacrificing utilitarian benefits of money foregone. You can play the ultimatum game in class.

"Imagine that I am holding $1,000 in cash, facing you and a person behind a curtain. You will never know the identity of the person behind the curtain, and he or she will never know your identity.

I will ask the person behind the curtain to make an offer for the division of the $1,000 between the two of you. If you accept the offer, I will divide the money as offered. But if you reject the offer, I'll keep the $1,000 and neither of you will receive anything."

Ask students to raise their hand if they are willing to accept a $500 offer. Most are likely to accept. Next reduce the offer to $200. How many are willing to accept? Next reduce it to $20. How many are willing to accept?

Engage them in a discussion of why they are willing or not willing to forego $20 and its utilitarian benefits. What is the role of anger over perceived unfairness? Do the expressive and emotional benefits gained by turning down a $20 offer exceed the utilitarian benefits of $20?

4. The appraisal-tendency framework (ATF) distinguishes *cognitive appraisals* from *appraisal tendencies.* Cognitive appraisals shape appraisal tendencies. People experience cognitive appraisals of anger after being cut off in traffic by bad drivers. Appraisal tendencies activated by the cognitive appraisals of anger shape future perceptions and behavior. Appraisal tendencies lead angry people to take more risk in

future settings even if these settings are unrelated to driving, such as taking more risk in investment settings.

How do you prevent yourself from letting cognitive appraisals of anger lead to appraisal tendencies of anger? What is the role of self-control? What are the roles of rules (e.g., count to 10 before you speak in anger)?

Teaching note: This is useful as a beginning of a class discussion about managing anger. When did expression of anger benefit you? When did you regret it because it caused harm?

Sadness and disgust

You can also replicate experiments about the effects of sadness and disgust on choices. You can induce sadness into a group of students with a clip from the film "The Champ," showing the death of the boy's mentor https://www.youtube.com/watch?v=SU7NGJw0kR8

You can induce disgust into another group with a clip from "Trainspotting," showing a man using a filthy toilet https://www.youtube.com/watch?v=cyiC3x6-Kzk

A control group can watch a clip about the Great Barrier Reef
https://www.youtube.com/watch?v=vTE_hQVccps

Try this experiment: Some students are given a highlighter set. They can keep it or sell it. How much do they ask if they are to sell it? Prices can go from $0.50 to $14 in $0.5 increments.

Other students are asked if they are willing to buy the set. How much are they willing to pay? Prices can go from $0.50 to $14 in $0.5 increments.

Sadness leads to desire to change one's circumstance - willingness to sell at a low price if they possess a set and buy at a high price if they do not possess one.

Disgust leads to desire to expel, willingness to sell at a low price if they possess the set.

This is an example of "cognitive appraisals" and "appraisal tendencies," where sadness or disgust induced by an earlier situation is carried over to unrelated economic decisions.

Adapted from: Jennifer S. Lerner, Deborah Small, and George Loewenstein, "Heart Strings and Purse Strings: Carry-Over Effects of Emotions on Economic Decision," *Psychological Science* 15 (2004): 337–341.

How do you prevent yourself from letting cognitive appraisals of sadness lead to appraisal tendencies of sadness? What is the role of self-control? What are the roles of rules?

How do you prevent yourself from letting cognitive appraisals of disgust lead to appraisal tendencies of disgust? What is the role of self-control? What are the roles of rules?

Fear

You can replicate experiments about the effects of fear on choices. You can induce fear into one group of students with a clip from the horror movie "The Shining." https://www.youtube.com/watch?v=WDpipB4yehk

A control group can watch a clip about the Great Barrier Reef https://www.youtube.com/watch?v=vTE_hQVccps

Next have students play a game: Tell them "I'll toss a coin right before your eyes. If it comes out heads, I'll pay you $1.50. If it comes out tails, you'll pay me $1. We'll play 20 rounds of this game. Before each round you can choose to participate or not.

You can change the $1 amount as necessary so the amount matters. A $1 payment to the teacher if tails and $1.50 payment from teacher if heads is probably appropriate for undergraduate students. $3 if tails and $4.50 if heads is probably appropriate for graduate students. $10 if tails and $15 if heads might be appropriate for professionals.

Anyone who fails to play all the 20 games is displaying fear, as the expected payoffs from you to them is greater than the expected payoffs from them to you. Moreover, their total losses in the worst case are $20 in the $1-$1.50 case which is not substantial even for undergrads. A $200 maximum loss is not likely substantial for professionals.

Adapted from George Loewenstein. Elke U. Weber, Christopher K. Hsee, and Edward L. Welch, "Risk as Feelings," *Psychological Bulletin* 127, no. 2 (2001), 267–286.

A useful column is http://www.jasonzweig.com/how-to-control-your-fears-in-a-fearsome-market/

Regret

5. Why is regret described as a "cognitive emotion"? Why are fear, sadness, and disgust not described as cognitive emotions? How susceptible are you to regret? How strongly do not agree with the statement: "Whenever I make a choice, I feel bad if another alternative has done better than the alternative I have chosen."

   Strongly disagree Strongly agree

   1 2 3 4 5 6 7

   What are some examples of instances where regret or pride taught you good lessons for future choices and behavior?

   What are some examples of instances where regret or pride taught you poor lessons for future choices and behavior?

Teaching note: This is an opening for a general discussion about regret. Regret is common emotion but people vary in their susceptibility to it and how they cope with it. Self-control has a role in coping with regret and rules help. Create a distribution of the ratings of students so students see where they place themselves relative to others, and discuss it.

Ask students: Suppose that two months ago you bought a part for your refrigerator for $50 but did not try to install it until today. Now you find that it is the wrong part, but can no longer return it for a refund.

Do students cope with regret by following the rules of "Let bygones be bygones" and "Don't cry over spilled milk"? Do they find it difficult to follow these rule? Do they try to frame the lost $50 in the frame of their $100,000 annual income and console themselves in the thought that $50 is a small amount relative to their income or wealth? Do they try to shift responsibility to someone else who persuaded them to buy this part, or caused a delay in installing it? Do they try to avoid finding out how other choices turned out so as to avoid finding choices turned out better?

Self-control

6. Self-control is described as a conflict between emotion and cognition, or as a conflict between the utilitarian, expressive and emotional benefits of having something now and the utilitarian, expressive and emotional benefits of having it later, or between judgments derived from System 1 and judgments derived from System 2.

   How do you exercise self-control in diets and in spending and saving? How do people you know exercise self-control in diets and spending and saving?

Teaching note: This is an opening for a general discussion about self-control and a way to illustrate internal conflicts. You can relate it to external "agency conflicts," such as between shareholders and managers. It is as if we have two people inside each of us, a child who wants it now, and a parent who knows that it is better to wait but cannot always control the child.

7. Please make the following choices and explain them:
   a. Do you prefer to receive $1,000 right now or would you rather wait a month and receive $1,050? What are the reasons for your choice?
   b. Do you prefer to receive $1,000 a month from now or would you rather wait two months and receive $1,050? What are the reasons for your choice?
   c. Do you prefer to receive $7,600 today or $1,000 at the end of each year for 15 years? What are the reasons for your choice?

Teaching note: This question illustrates the tendency toward "hyperbolic discounting" and its association with self-control. Hyperbolic discounting is manifested in the observation that many people who prefer $1,000 right now over $1,050 in a month, nevertheless prefer to wait two months for $1,050 rather than one month for $1,000. Overcoming the temptation of the immediate availability of money requires much self- control if we are to choose to wait a month. In this case, System 2 might not be powerful enough to overrule System 1. But the choice between waiting one month and waiting two does not create as strong a conflict between System 1 and System 2, making it easier for System 2 to overrule System 1.

The implied interest rate (discount rate, internal rate of return) of an annuity paying $1,000 per year for 15 years is approximately 10% if its present value is $7,600.

It is important to explore students' reasons for choices. One possible reason for a preference for $1,000 over $1,050 in a month is lack of trust that the $1,050 would actually be paid in a month. Another possible reason is that foregoing $50 (5% return in a month) is less costly than a payday loan which is the only alternative. Similar reasoning might apply to the choice between $7,600 and a 15-year $1,000 annuity.

8. Please make the following choices:

   Which would you prefer if both were free, a or b?

   a. Dinner at a fancy French restaurant

   b. Dinner at a local Greek restaurant

      If you prefer the French restaurant, which would you prefer, c or d?

   c. Dinner at the French restaurant on Friday in 1 month

   d. Dinner at the French restaurant on Friday in 2 months

      What are the reasons for your preference?

      If you prefer the French restaurant, which would you prefer, e or f?

   e. Dinner at the French restaurant on Friday in 1 month and dinner at the Greek restaurant on Friday in 2 months

   f. Dinner at the Greek restaurant on Friday in 1 month and dinner at the French restaurant on Friday in 2 months

      What are the reasons for your preference?

      If you prefer the Greek restaurant, which would you prefer, g or h?

   g. Dinner at the Greek restaurant on Friday in 1 month

   h. Dinner at the Greek restaurant on Friday in 2 months

What are the reasons for your preference?

If you prefer the Greek restaurant, which would you prefer, i or j?

i. Dinner at the Greek restaurant on Friday in 1 month and dinner at the French restaurant on Friday in 2 months

j. Dinner at the French restaurant on Friday in 1 month and dinner at the Greek restaurant on Friday in 2 months

What are the reasons for your preference?

Teaching note: This is an example of preferring to postpone gratification, contrary to the weak-self-control prediction that people always prefer gratification now. Some people who prefer the French over the Greek choice prefer to leave the experience of the French restaurant for last. It might indicate strong self-control or even excessive self-control as when people save for retirement, postponing gratification, but find it difficult to spend reasonable amounts in retirement.

Adapted from George E Loewenstein and Drazen Prelec, "Preferences for Sequences of Outcomes," *Psychological Review*, 100 (1993): 91-108

9. Imagine you must schedule two weekend outings in a city where you once lived. You do not plan on visiting the city after these two outings.

   You must spend one of these weekends with an irritating, abrasive aunt who is a horrendous cook. The other weekend will be spent visiting former work associates whom you like a lot.

   Suppose one outing will take place this coming weekend, the other the weekend after. Do you prefer a or b? Why?

   a. This weekend with friends and next weekend with abrasive aunt

   b. This weekend with abrasive aunt and next weekend with friends

Teaching note: This is similar to the easier question. You may prefer to leave the best for last.

Adapted from George E Loewenstein and Drazen Prelec, "Preferences for Sequences of Outcomes," *Psychological Review*, 100 (1993): 91-108

10. Suppose you win ten dinner prize certificates, each of which can be used (once) to receive a "dream restaurant night." On each such night, you and a companion will get the best table and an unlimited budget for food and drink at a restaurant of your

choosing. There will be no cost to you: all payments, including gratuities, come as part of the prize. The certificates are available for immediate use, starting tonight, and there is an absolute guarantee that they will be honored by any restaurant you select if they are used within a two-year window. If they are not used up within this two-year period, however, any that remain are valueless.

The questions below concern how many of the certificates you would ideally like to use in each year, how tempted you would be to depart from this ideal, and what you expect you would do in practice:

(a) From your current perspective, how many of the ten certificates would you ideally like to use in year 1 as opposed to year 2?

(b) Some people might be tempted to depart from their ideal allocation in (a). Which of the following best describes you (please mark only one):

— I would be somewhat or strongly tempted to keep more certificates for use in the second year than would be ideal;

— I would have no temptation in either direction (skip to d);

— I would be somewhat or strongly tempted to use more certificates in the first year than would be ideal.

(c) If you were to give in to your temptation, how many certificates do you think you would use in year 1 as opposed to year 2?

(d) Based on your most accurate forecast of how you think you would actually behave, how many of the nights would you end up using in year 1 as opposed to year 2?

Why did you choose as you did?

Teaching note: The measure of self-control problems is the numerical difference between expected consumption in the first period and ideal consumption, (d) minus (a). This difference is the expected-ideal (EI) gap. A positive EI gap represents a standard problem of overconsumption, indicating insufficient self-control, while a negative gap corresponds to under-consumption, indicating excessive self-control. You are likely find that some have a positive EI gap and some negative, a good way to discuss self-control.

Adapted from John Ameriks, Andrew Caplin, John Leahy, and Tom Tyler, “Measuring Self-Control Problems,” American Economic Review, 97 (2007): 966-972

Mood (Optimism and pessimism)

11. Assume you are the vice president of product development in a company. You are evaluating 3 new product proposals. For each proposal you have an estimate of

a. Research and development costs.

b. Average annual sales in first five years after product introduction.

You have made it a practice to ask two persons in research and development, A and B, in whom you have equal confidence, to give you independent estimates of research and development costs. You also ask two persons in marketing, X and Y, in whom you have equal confidence, to give you independent estimates of sales. These estimates are given below for the three proposals. In order to make a financial analysis of each proposed product, you must make your own estimate of research and development cost and sales, in the case of each proposal. Your estimate may be based on the estimates provided to you, but your estimate does not have to be the average of the estimates given to you.

	Research and Development Costs (in thousands of dollars)		Sales (in thousands of units)		Enter Your Estimate	
Project No.	A's Estimate	B's Estimate	X's Estimate	Y's Estimate	Research & Development Cost Estimate ($)	Sales Estimate
1	$167	$272	594 units	194 units	,000	,000 units
2	274	783	901 units	396 units	,000	,000 units
3	529	433	113 units	609 units	,000	,000 units

To what extent do you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree
Research and development people typically overestimate R&D costs	1	2	3	4	5	6	

Research and development people typically underestimate R&D costs	1	2	3	4	5	6
Marketing people typically overestimate sales	1	2	3	4	5	6
Marketing people typically underestimate sales	1	2	3	4	5	6

Teaching note: You can use this question and the first table for a discussion about optimism and pessimism in capital budgeting decisions. Do students choose estimated R&D costs that are the mean estimates of A and B? If so, they expect no optimistic or pessimistic bias. But if they choose estimates closer to the top estimate they expect optimistic bias, and if they choose estimates closer to the bottom they expect pessimistic bias. Analysis of optimism and pessimism in sales is analogous.

You can use the second table for a discussion about the explicit beliefs of students. Is there a difference between the expectations of those with work experience and those without? Is there a difference between the expectations of those with direct experience in project management and those without?

Adapted from Meir Statman and Tyzoon T. Tyebjee, "Optimistic capital budgeting forecasts: An experiment," Financial Management, 14 (1985): 27-33.

Affect

12. Imagine that you are about to study abroad and have received a good-bye gift from a friend.

It is a wool coat, from a nearby department store. The store carries a variety of wool coats. The worst costs $50 and the best costs $500. The one your friend bought you costs $55.

How generous do you think your friend is?

Not generous at all						Extremely generous
0	1	2	3	4	5	6

How happy are you about the gift?

Not happy at all Extremely happy

0 1 2 3 4 5 6

How expensive do you think the coat is?

Not expensive at all Extremely expensive

0 1 2 3 4 5 6

Teaching note: You can ask one group of students the question above. Ask another group of students the question below:

Imagine that you are about to study abroad and have received a good-bye gift from a friend. It is a wool scarf, from a nearby department store. The store carries a variety of wool scarves. The worst costs $5 and the best costs $50. The one your friend bought you costs $45.

How generous do you think your friend is?

Not generous at all Extremely generous

0 1 2 3 4 5 6

How happy are you about the gift?

Not happy at all Extremely happy

0 1 2 3 4 5 6

How expensive do you think the coat is?

Not expensive at all Extremely expensive

0 1 2 3 4 5 6

You are likely to find that people think of the person who gave the scarf as more generous, they are happier about the scarf and think that it was more expensive.

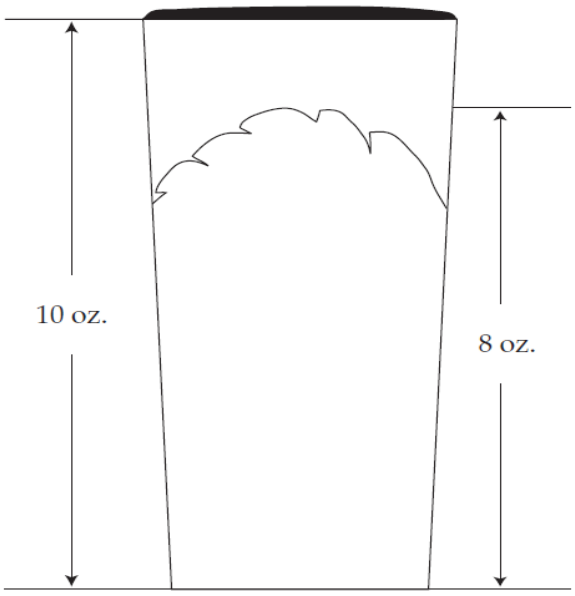
This is adapted from Christopher Hsee, "Less is better: When low-value options are valued more highly than high-value options." Journal of Behavioral Decision Making 11 (1998): 107-121.

Hsee's explanation of his findings is based on the *evaluability* hypothesis. The hypothesis claims that when a person judges an option in isolation, the judgment is influenced more by attributes that are easy to evaluate than by attributes that are hard to evaluate, even if the hard-to-evaluate attributes are more important. An attribute is said to be hard to evaluate if the person is not aware of its distribution information (e.g. its effective range, its neutral reference point, etc.), and consequently does not know whether a given value on the attribute is good or bad.

Conversely, an attribute is said to be easy to evaluate if the person knows its distribution information and thereby knows whether a given value on the attribute is good or bad.

Alternatively, we can think of an explanation based on *affect.* The affect of the scarf is more positive than that of the coat because it is at the upper end of the price scale rather than the bottom. Note the affect language of "good" and "bad" is Hsee's description of the *evaluability* hypothesis.

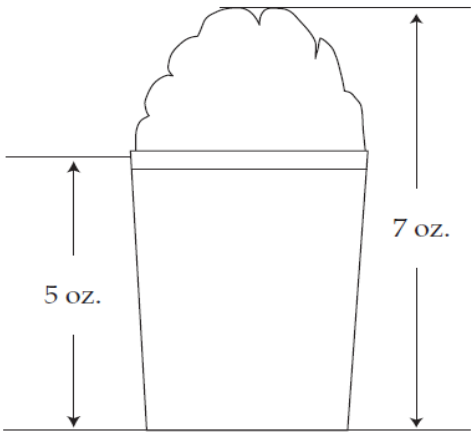
13. Imagine the following scenario: It is summer in Chicago. You are on the beach at Lake Michigan. You find yourself in the mood for some ice cream. There happens to be an ice cream vendor, A, on the beach. She sells Häagen Dazs ice cream by the cup. For each serving, she uses a 10 oz cup and puts 8 oz of ice cream in it, as in this illustration:



What is the most you are willing to pay for the ice cream? _____

Teaching note: Ask another group of students:

Imagine the following scenario: It is summer in Chicago. You are on the beach at Lake Michigan. You find yourself in the mood for some ice cream. There happens to be an ice cream vendor, B, on the beach. She sells Häagen Dazs ice cream by the cup. For each serving, she uses a 5 oz cup and puts 7 oz of ice cream in it, as in this illustration:



What is the most you are willing to pay for the ice cream? _____

The affect of cup A is negative as it seems stingy, whereas the affect of cup B is positive as it seems generous. You might find that students are willing to pay more for cup B than for cup A.

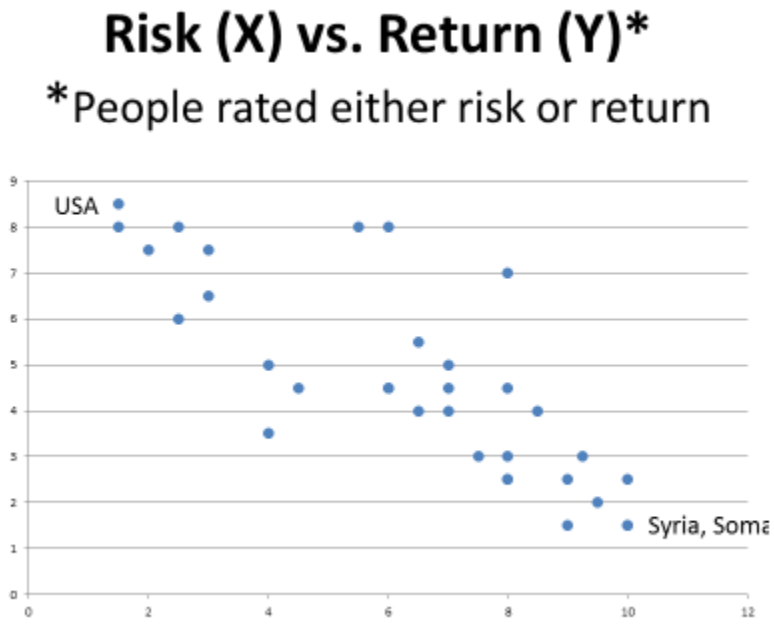
Now place the two figures side by side – you are likely to see that now they prefer cup A over cup B. You can think about it as an example of the operations of System 1 and System 2. System 1 leads to a choice of cup B by the affect shortcut, but placing the cups side by side frames places the problem in a transparent form, making it easier for System 2 to correct System 1.

Teaching note: Another question probing the influence of affect: Assign the "Country returns" file to group 1 of three groups of students. It asks: Please indicate your perception of the expected return of a broad index of stocks of each country in the following 12 months, from 1 for low expected return to 10 for high expected return.

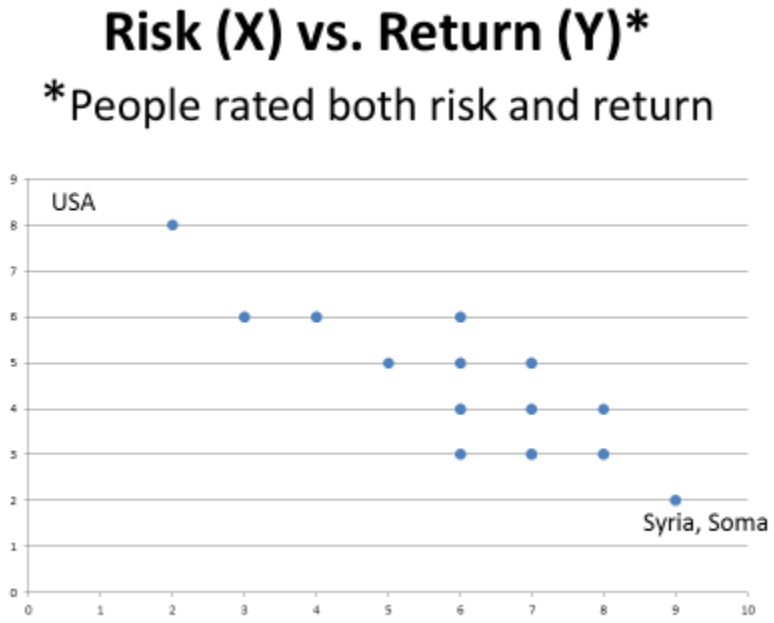
Assign the "Country risk" file to group 2 of the students. It asks: Please indicate your perception of the risk of a broad index of stocks of each country in the following 12 months, from 1 for low risk to 10 for high risk.

Assign the "Country returns and risk" file to group 3 of students. It asks: Please indicate your perception of the expected return and risk of a broad index of stocks of each country in the following 12 months, from 1 for low expected return to 10 for high expected return, and from 1 for low risk to 10 for high risk.

Calculate the mean returns and risk of each country according to groups 1 and 2. Calculate a regression of returns on risk and display as a scatter diagram. It is likely to look like this:



Calculate the mean returns and risk of each country according to group 3. Calculate a regression of returns on risk and display as a scatter diagram. It is likely to look like this:



Ask students why the results are as they are. You might find, for example, that students think that the risk in Syria is high but the return low because of the war in the country. But why would investors be willing to accept low expected returns with high risk? Are they misled by System 1 affect? Do they consider Syrian stocks as lottery tickets that have both low expected returns and high risk?

Teaching note: Another question is similar to the one above but with companies' risk and returns. The files are "Company returns" and " Company risk." You also have a file "Company risk and return" where students fill in both risk and returns. See if filling both risk and retun alerts students to an association where high returns correspond to high risk.

Chapter 5 - Correcting cognitive and emotional errors

1. Do you choose generic aspirin or Bayer aspirin? Why? Do you choose generic acetaminophen or Tylenol? Why? Do you choose index funds that aim to match the market or active funds that aim to beat it? Why?

Teaching note: Students may have many reasons, good or bad, for choices. An open discussion would clarify wants, errors, and distinctions between them. (e.g. Do we really know if generic acetaminophen is as effective as Tylenol?) But the discussion should also note that we can transform from a normal-ignorant status to a normal-knowledgeable one by knowing facts. Medical professionals know the facts of medicine and choose generic medicine more often than those lacking medical knowledge. Finance professors know the fact of finance and choose index funds more often than those lacking financial knowledge.

2. How do you know who's an expert?

   How do you know who are good plumbers?

   How do you know who are good physicians?

   How do you know who are good financial advisers or money managers?

Teaching note:

How do you know who are good plumbers? (e.g. Are they on Angie's list?)

How do you know who are good physicians? (e.g. Are they using evidence-based-medicine?)

How do you know who are good financial advisers? (e.g. Are they using evidence-based-investing?)

A good point to emphasize that we should look for reliable information. Did you get a recommendation about a plumber from a neighbor who used his services? This is probably information you can rely on as the quality of plumbing work is easy to evaluate. But it might be better to supplement this with information from Yelp that presents the experience of many customers of many plumbers.

Did you get a recommendation about a financial adviser, money manager, or physician from a neighbor? Reliable information about financial advisers, money managers, or physicians is more difficult to evaluate. Moreover, information is often unclear (e.g., is surgery better than

radiation for this patient?) and self-interest gets in the way of facts. Financial advisers, money managers, and physicians might be experts, able to diagnose problems correctly, but do they let their self-interest drive their recommendations?

3. For undergraduate students: Make a list of as many as possible objectives and benefits of an ideal internship.

   For graduate students: Make a list of as many as possible objectives and benefits of an ideal job.

Teaching note: This question is about correcting framing errors.

Create a combined list of objectives and benefits based on students' lists and ask students to choose those relevant to them. See if students choose more objectives and benefits on average than the average in their initial list. Use as an example correcting framing errors (where students frame narrow lists). Also show how System 2 can be engaged to provide a broader list than provided by the System 1 of each student.

You can also discuss the difference between framing from the perspective of each person and framing from the combined perspective of all people. One person can be above average but not all people can be above average. One person can beat the market but not all people can beat the market. One person can see clearer if he stands in a stadium but not all people can see clearer if all stand in the stadium. One person can increase her savings but when all people increase their savings we might have a recession.

Teaching note: This class experiment is about correcting anchoring and adjustment errors.

A famous experiment asks people to list the last 4 digits of their phone number and then asks for their estimate of the number of physicians in London. The last 4 digits of a phone number serve as an anchor, such that estimates of number of physicians are higher when phone numbers are higher. (These results might not be robust, especially when the sample is small)

Provision of plausible anchors can correct anchoring errors.

Ask students to list the last 4 digits of their phone number. Next, ask them to estimate the number of physicians in Nevada. See if indeed estimates are higher when phone numbers are higher.

Ask that they write the numbers down before you proceed to describe the nature of the experiment. You might draw a scatter diagram of phone numbers on the board as students announce their numbers - phone numbers on the X axis, and estimates of number of physicians on the Y axis.

You can find the number of physicians at http://kff.org/other/state-indicator/total-active-physicians/. It is approx. 5,600.

Is there an anchoring effect? You might not find it, but the experiment is also good for illustrating the benefits of plausible anchors.

First, what is the median estimate of students?

Now tell them that the number of physicians in Arizona is 16,500. Ask them to estimate again the number of physicians in Nevada. How does it change?

Next, tell them that the population of Nevada is approx. 2.9 million and that of Arizona is approx. 6.8 million. How does it change their estimate?

You can find population numbers at https://en.wikipedia.org/wiki/List_of_U.S._states_and_territories_by_population

Ask students: What questions would you ask before you specify the number of physicians in Nevada? In other words, what additional plausible anchors can help? Average age of the population is one additional anchor. So is the proportion of those older than 65.

The lesson is that anchoring shortcuts can be pretty good, but we need to begin with good anchors.

Try also using estimates of home prices in your area. If you know the average price of a house in Sunnyvale in the Bay Area of Northern California, can you estimate the price of an average house in neighboring Mountain View? How about estimating the price in neighboring Palo Alto? Students in the Bay Area of Northern California likely have implicit anchors, knowing that prices in Sunnyvale and Mountain View are likely similar whereas Palo Alto prices are likely higher.

4. Go to http://boards.fool.com/

   In the left column you'll see a box where you can place a ticker symbol of a stock. Choose one or more stock message boards (e.g. Facebook, Alphabet, Netflix)

   Look at messages from a year ago, where writers predicted what would happen to a company and its stock in the future. How much foresight did the writers demonstrate?

Teaching note: This question is about correcting hindsight errors. Students would see that not all had foresight and it is an error to pick only those who seem, in hindsight to have had foresight. Also, use "prospective hindsight" as a System 2 method that corrects hindsight errors. An investor considering concentrating her portfolio in the technology sector might be guided to ask: Imagine that we are a decade from now, why did technology stocks yield lower returns than other stocks? Such question elicits potential causes for failure that do not come to mind easily in foresight when engaging System 1.

An investor confident that inflation and interest rates are about to increase can be prompted to think about why this might not happen.

5. Read http://www.jasonzweig.com/lesson-from-buffett-doubt-yourself/

   What does the article tell us about confirmation errors and the systematic process needed to correct them?

Teaching note: A systematic process is necessary to force a search and consideration of disconfirming evidence. “A deliberate, lifelong effort to find people to tell him why he might be wrong is one of the keys to Warren Buffett’s success. It doesn’t come naturally to most investors.”

Mr. Buffett once noted about the scientist Charles Darwin that “whenever he ran into something that contradicted a conclusion he cherished, he was obliged to write the new finding down within 30 minutes. Otherwise his mind would work to reject the discordant information, much as the body rejects transplants. Man’s natural inclination is to cling to his beliefs, particularly if they are reinforced by recent experience.”

6. Read http://www.jasonzweig.com/how-to-ignore-the-yes-man-in-your-head/

   Suppose that you chair a meeting at an investment company where a decision would be made on whether to invest in a particular stock or not. One member of the committee researched the stock and strongly supports investing in it. How would you design and manage the meeting to overcome confirmation errors with as little animosity among members as possible?

Teaching note: You can let the “champion” of this stock list all the reasons for investing in the stock. Next, ask other committee members to offer confirming reasons, adding or reinforcing reasons for investing in the stock. Now solicit disconfirming reasons, supporting a decision not to invest in the stock. Last, reach a decision that takes into account both confirming and disconfirming reasons and evidence

This way, you separate the decision on the stock from challenges to members’ knowledge or intelligence.

7. What is the current level of the S&P 500 Index?

   What is your best estimate of the level of the index a year from now?

What is your 67% confidence interval around your estimate? (Pick a pair of S&P 500 Index values such that there is a 67% probability (a 2 out of 3 chance) that the values of the S&P 500 Index a year from today would be higher than the low value but lower than the high value.)

Teaching note: This question is about correcting overconfidence errors of the overprecision kind.

Properly calibrated 67% confidence intervals of future S&P 500 Index returns contain the realized return in 67% of forecasts. Yet 67% confidence intervals commonly manifest overprecision errors, containing the realized return much less than 67% of the time.

A 67% confidence interval extends from approximately one standard deviation below the estimated level of the S&P 500 Index to one standard deviation above that level. The standard deviation of the S&P 500 Index was approximately 20%. So if a student estimates the level of the S&P 500 Index as 10% above its current level she would be right to set the confidence interval as from -10% to +30%.

How did students do?

To correct overprecision errors - split the question into parts, asking students for 10% and 40% confidence intervals before asking for 67% confidence intervals. This prompts students to use System 2 and acknowledge that a 67% confidence interval must be wider than a 10% or 40% confidence interval.

Also: ask students to estimate confidence intervals for 1 month in the future and 6 months in the future before asking them to estimate confidence intervals 12 months in the future.

This method makes time explicit, highlighting the uncertainty of estimates and leading people to engage System 2 and provide better calibrated confidence intervals, knowing that 12-month confidence intervals are likely wider than a 6-month confidence intervals and 6-month confidence intervals are likely wider than 1-month confidence intervals.

Also, use wisdom-of-crowds – what is the average estimate among students?

Wisdom-of-crowds-within-one-person can also help. What is your best guess for the S&P 500 Index level 12 months from now? Now assume that you are wrong. What is your next guess? The average of two guesses is generally more accurate than each guess.

Wisdom-of crowds is more accurate than wisdom-of-crowds within just a few people. An average of the guesses of two people is generally more accurate than an average of two guesses of one person.

Also: Have students guess the number of balls or paperclips in a jar. Ask each for a guess of the number of balls or paperclips. Say “suppose you’re wrong. What is your next guess?” Average within a student and across students and see what you find.

Teaching note: Correcting confidence errors – Overconfidence as overestimation and overplacement errors

Overestimation can be corrected with probing questions. What is the proportion of people killed in terrorist actions in the U.S. last year relative to the people killed in traffic accidents? What is the expected return of the S&P 500 during the next 12 months? A fair answer is T-bill rate plus 3% or perhaps plus 6%.

Overplacement can also be corrected with probing questions. Ask: Are you an above-average driver? What makes you think so? Perhaps because you had no accident during the last 5 years. Do you know what proportion of drivers had accidents during the last 5 years?

Do you think that the S&P 500 return would be high (above average – you can provide 10% as an average) next year? Do you think that the S&P 500 return would be low (below average) next year?

Why are you sure that the S&P 500 return would be high next year? Because it was high last year and tends to continue in a hot-hand pattern?

Why are you sure that the S&P 500 return would be low next year? Because it was high last year and tends to reverse in a gamblers' fallacy pattern?

Do you know that the correlation between annual S&P 500 returns is approximately zero?

8. Whereas people with insufficient self-control are overly eager to indulge, people with excessive self-control are excessively reluctant to indulge. Reflect on your behavior and the behavior of others. Can you identify insufficient or excessive self-control in yourself and in others in financial choices and behavior and in choices and behavior outside of finance? What methods do you and people you know adjust self-control up when it is insufficient, and down when it is excessive?

Teaching note: This continues a Chapter 4 discussion about self-control and ways to enforce and adjust it. Self-control corresponds largely to the personality trait of conscientiousness. It is useful to emphasize that self-control can be excessive, as when it compels some people to spend little in retirement relative to their resources, or when it bars taking reasonable risks, such as switching jobs.

9. Look up Stickk.com. What does it teach us about self-control and the benefits of commitment devices? Can you find other services offering commitment devices? How are they similar to one another and how do they differ? Would you consider using them to improve financial choices? Would you consider using them to improve other choices, such as diet? Why or why not?

Teaching note: This continues a discussion about commitment devices as tools for aiding self-control. Do students find it appealing? Do they find it too draconian? Do they find it demeaning in the assumption that we need outside control to enforce what self-control does not? How does it relate to correcting, nudging, and mandating, and to libertarianism, libertarian-paternalism and paternalism?

10. In your experience, what hampers readiness for correction? Is it ignorance about facts, financial or otherwise? Is it ignorance about human behavior? Is it fear of change, such as a career change? Is it hunger, hampering self- control, as when using items from the mini-bar at a hotel? Is it the effort required to use System 2, as when foregoing reading a contract?

Teaching note: You can share your personal experiences, such as job or career changes. Are professors not ready to accept that Internet-based teaching would replace face-to-face teaching because it induces fear of being automated and is contrary to their self-interest?

11. One example where exploiting trumps correcting is the experience of borrowers before the Truth in Lending Act (Regulation Z) was enacted, See: https://www.ccg-catalyst.com/why-is-there-a-truth-in-lending-act-aka-regulation-z/#sthash.3u3hKNvL.dpuf

    https://www.ccg-catalyst.com/why-is-there-a-truth-in-lending-act-aka-regulation-z/

    Additional examples include:

    http://www.jasonzweig.com/fund-managers-lift-results-with-timely-trading-sprees/

    http://www.jasonzweig.com/conflict-of-interest-moi/

    http://www.jasonzweig.com/now-thats-performance-art/

    How can we counter exploitation personally, and how can we counter exploitation through public policy?

Teaching note: This is a good place to discuss how financial-facts knowledge and human-behavior knowledge can help us counter exploitation attempts. For example, having financial-facts knowledge that money managers use window dressing to disguise fees, and having human-behavior knowledge that money managers exploit availability errors by advertising their best performing funds.

12. What are the differences between correcting, nudging, and mandating and how are they related to the differences between libertarianism, libertarian-paternalism, and paternalism?

Teaching note: You will engage again in a discussion about libertarianism, libertarian-paternalism, and paternalism in Chapter 9, in the context of behavioral life-cycle, but it is good to begin the discussion here, to clarify differences between the 3 ideologies and associated policies.

13. What are some examples of correcting, nudging, and mandating in finance and beyond it? (e.g., Correcting errors by teaching financial facts and human behavior, nudging toward healthy diets, mandating people away from illegal drugs)

Teaching note: Other examples include facts and behavior in other contexts, such as health – nudging to reduce weight, mandating FDA approval of drugs, transportation – mandating drivers' licenses, as well as finance - mandating against insider trading.)

Chapter 6: Experienced happiness, life-evaluation, and choices: Expected Utility Theory and Prospect Theory

1. Record your answers to the following questions every day for a week. Your answers are confidential and need not be disclosed to others. Reflect on your daily *life evaluation* and *experienced happiness.* Do your answers indicate that life evaluation can be described as *sustained happiness* that is largely constant over the days of the week, and experienced happiness can be described as *fleeting happiness* that varies day by day more than life evaluation?

   Assessing *life-evaluation* by Cantril's Self-Anchoring Scale: Please imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you, and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?

   0 1 2 3 4 5 6 7 8 9 10

   Assessing *experienced happiness* by the following questions:

   a. Did you experience *happiness* during a lot of the day yesterday?

   Strongly No Strongly Yes

   1 2 3 4 5 6 7

   b. Did you experience *enjoyment* during a lot of the day yesterday?

   Strongly No Strongly Yes

   1 2 3 4 5 6 7

   c. Did you *smile* or *laugh* a lot yesterday?

   Strongly No Strongly Yes

   1 2 3 4 5 6 7

   d. Did you experience *worry* during a lot of the day yesterday?

   Strongly No Strongly Yes

   1 2 3 4 5 6 7

e. Did you experience *sadness* during a lot of the day yesterday?

Strongly No Strongly Yes

1 2 3 4 5 6 7

Calculate your daily experienced happiness as the sum of a, b, and c, minus the sum of d and e.

Teaching note: You can ask your students about the extent of day to day variations in life evaluation and experienced happiness. You are likely to hear that variations are greater in day to day experienced happiness. But even deviations from these common variations are good opportunities for discussion. You can link life evaluation to expected utility theory and experienced happiness to prospect theory.

You can also discuss the association of income with life-evaluation and experienced happiness, without asking personal questions about income.

2. Suppose that a friend tells you that she is sad because the stock market declined yesterday, reducing the value of her retirement savings. Her experienced happiness is low. How would you try to reframe the situation so as to increase her experienced happiness? How does reframing related to expected-utility theory and prospect theory?

Teaching note: You can discuss ways by which we can reframe situations to modify experienced happiness. A friend might say (in less technical words than those that follow here) "You lost some money in a stock market fall yesterday. The loss reduced your experienced happiness substantially, consistent with prospect theory, but your wealth declined by only a little, moving you down just a bit on the expected-utility curve. Moreover, think about your life-evaluation, has it changed by much? And remember that your wealth relative to the wealth of others is likely unchanged because the stock market loss affected almost everyone, especially those with higher wealth, leaving your social status unchanged or perhaps even improved."

3. Please answer the following question:

   Suppose that you are given an opportunity to replace your current investment portfolio with a new portfolio. The new portfolio has a 50-50 chance to increase by 50% your standard of living during your lifetime. Yet the new portfolio also has a 50-50 chance to reduce by X % your standard of living during your lifetime. What is the maximum X% reduction in standard of living you are willing to accept?

0% 3% 6% 9% 12% 15% 18% 21% 24% 27% 30% 33% 36% 39% 42%

Teaching note: Students are likely to choose a different X% maximum loss they would accept for a 50-50 chance to have a 50% gain. Ask them why they chose as they did. The ratio of 50% gain to X% loss is likely to be greater than 2 or 2.5, often used as the common loss-aversion ratio. Why? Likely because the stakes here are large. Verify by asking them about choices when small stakes are involved. What is the maximum loss you are willing to accept in a 50-50 chance to have a $50 gain? Answers are likely $20 or perhaps more. Now ask them: What is the maximum loss you are willing to accept in a 50-50 chance to have a $5,000 gain? Answers are likely less than $2,000.

4. Please answer the following question:

   Suppose that you desperately want to increase your standard of living by 50%. For example, imagine that your standard of living has declined because of war in your country and you desperately want to raise it back to its previous level by changing your investment portfolio.

   Now suppose that you are given an opportunity to replace your current investment portfolio with a new portfolio. The new portfolio has a 50-50 chance to increase by 50% your standard of living during your lifetime. Yet the new portfolio also has a 50-50 chance to reduce by X % your standard of living during your lifetime. What is the maximum X% reduction in standard of living you are willing to accept?

   0% 3% 6% 9% 12% 15% 18% 21% 24% 27% 30% 33% 36% 39% 42%

Teaching note: The earlier question was about loss-aversion. The reference point was the current position. This question is about shortfall-aversion. The reference point is an aspiration that is higher by 50% than the current position. Are students willing to accept a greater loss for a chance for a 50% gain in their standard of living?

You can illustrate the shortfall-aversion point with the experience of Syrian refugees who are willing to accept a chance of deportation from Europe, losing the money the invested getting there, or even losing their lives on a boat from Turkey to Greece.

5. Suppose that you had a job paying $100,000 but lost it in a recession. You have been unemployed for one month. Would you be willing to take a similar job paying $70,000? Why or why not?

   Now suppose that you have been unemployed for one year. Would you be willing to take a similar job paying $70,000? Why or why not?

Teaching note: The reference point is likely $100,000 if the period is short, as one month. Shortfall-aversion might deter you from taking a $70,000 job. Unemployment benefits might

also play a role, as well as savings and the income of a spouse. After a year or longer you might reduce the aspiration level to $70,000. Ask students to describe the process of reducing the aspiration level. How difficult is it? How demoralizing?

6. Consider a choice between a sure $5,000 loss and a 50-50 gamble for a $15,000 loss or a zero loss. Is the choice of the gamble consistent with variance aversion? Why or why not?

   Under what conditions or frames is the choice of the gamble consistent with loss-aversion? Under what conditions or frames is the choice of the gamble consistent with shortfall-aversion?

Teaching note: The choice of the gamble is inconsistent with variance-aversion in expected utility theory because the expected loss in the gamble is $7,500, an expected loss higher than the sure $5,000 loss, and the variance of the possible outcomes of the gamble is higher than the zero-variance of the sure $5,000 loss. Both lower expected returns and higher variance incline against the gamble people whose choices follow expected utility theory. But the choice of the gamble is consistent with shortfall-aversion of people whose choices follow prospect theory. The mean of the gain-loss utility of the gamble is a negative 102.5 units, the mean of a negative 205 units and zero units, still better than the loss of 150 units of gain-loss utility of the sure $5,000 loss.

Draw expected utility and prospect theory graphs, marking the axes, and ask questions about choices where outcomes are all gain, all losses, mixed gains and losses, ranges of variance-aversions, loss-aversion, and shortfall-aversion.

7. Think of a lottery ticket priced at $10, offering an objective 1% probability to win the $500 prize. What is the expected value of the lottery ticket? What is the minimum decision weight consistent with a decision to buy the lottery ticket? What is the role of hope in decision weights in decisions to buy this lottery ticket? Decision weights in the context of lotteries are likely to vary among people. What underlies these differences?

Teaching note: The expected value of the ticket is $5, 1% of the $500 prize. The minimum decision weight consistent with a decision to buy the ticket is 2, the ratio of 10 to 5. Hope of winning might increase that decision weight much beyond 2. A decision weight of 8 implies that the subjective probability of winning is 8% and the expected value of the ticket is $40.

People might assign high decision weights because of cognitive errors such as thinking that a particular ticket has a higher probability of winning because its number corresponds to the birthday of their child, or because of wants for expressive and emotional benefits such as hope for great riches or even hope for a modest $500 needed to fix a car.

8. We had 2 major stock market crashes in the last 100 years. This implies a 1% objective probability of a stock market crash in the next 6 months. Yet the average subjective estimate of that probability is 16%, consistent with a decision weight of 16. What is the role of fear in this decision weight? Decision weights of the objective probability of a stock market crash are likely to vary over time. What might underlie these variations. Decision weights of the objective probability of a stock market crash are also likely to differ among people. What might underly these differences?

Teaching note: Fear increases the decision weights of crashes. Fear is greater following a crash, increasing the decision weight of the probability of a further crash. Availability shortcuts and errors might do the same. Similarly, demand for earthquake insurance increases following an earthquake.

9. The abstract of the article "Who Sold During The Crash Of 2008-9? Evidence From Tax-Return Data On Daily Sales Of Stock" says: "We examine individual stock sales from 2008 to 2009 using population tax return data. The share of sales by the top 0.1% of income recipients and other top income groups rose sharply following the Lehman Brothers bankruptcy and remained elevated throughout the financial crisis. Sales by top income and older age groups were relatively more responsive to increased stock market volatility."

   Hoopes, Jeffrey L., Patrick Langetieg, Stefan Nagel, Daniel H. Reck, Joel B. Slemrod, and Bryan Stuart, "Who Sold During the Crash of 2008-9? Evidence from Tax-Return Data on Daily Sales of Stock." (May 2, 2016). Available at SSRN: http://ssrn.com/abstract=2773682 or http://dx.doi.org/10.2139/ssrn.2773682

   What possible reasons might underlie differences in behavior between people with high and low incomes, and between older and younger people?

Teaching note: Older people are more fearful that a crash would devastate their retirement income, as they are likely to rely on their portfolios (rather than employment) for spending. It is not clear why the very wealthy are still more fearful. The authors write in their conclusion:

"The data support theories that emphasize willingness to take risk among investors close to or in retirement. More difficult to explain is the tendency of high-income investors to sell in response to bursts in volatility. Perceived market-timing skills of financially more sophisticated investors, or their relatively high use of margin trading, could play a role. There could also be a connection to the disposition effect—the tendency of investors to hold on to stocks with accumulated losses—as the groups that we find are less likely to sell are also those that previous research has identified as having stronger disposition effects. We encourage future

research to further examine why individuals at the very top of the income distribution are especially prone to sell stock during tumultuous times."

Chapter 7: Behavioral Finance Puzzles: The dividend puzzle, the disposition puzzle, and the puzzles of dollar-cost averaging and time-diversification

1. What is the dividend puzzle? What makes it a puzzle?

Teaching note: This is a general question whose answer is in the chapter, but it is good to discuss it in class and perhaps describe the historical path of our understanding of dividends, before the appearance of Miller and Modigliani's article and afterwards.

2. Why does it seem that dividends are extras – like fruit picked off a tree that does not shrink the tree, whereas, in truth, they are more like a log that shrinks as we split it and burn some of its pieces in a fireplace?

Teaching note: The Miller-Modigliani dividend argument compares total wealth when a dividend is not paid to total wealth when it is paid. The total wealth is the same under both conditions. In essence, it compares a decision not to pay a dividend to a decision to pay a dividend by reinvesting it in shares of the company. This is not how normal people frame dividends. Dividends are framed as belonging to an income mental account, and the option of reinvesting them is overlooked for those in the habit of spending them.

3. Check what happens to the prices of 5 stocks on ex-dividend dates. For ex-dividend dates and amounts see: http://www.dividend.com/ex-dividend-dates.php

   For stock prices place the name of a company and/or ticker symbol in an Internet search engine.

   For example, the ex-dividend date of Charter Financial Group (CHFN) shares was Monday, May 9, 2016 and the amount of dividend was $0.05 per share. The ending price per share on Friday, May 6, the preceding trading day, was $12.68 and it *increased* to $12.71 at the end of May 9. This is an increase of $0.03 (0.23%) on top of the $0.05 (0.39%) dividend, for a total of $0.08 (0.63%)

   Note, however, the need to consider any general change in stock prices. The price of VTI, Vanguard Total Stock Market Index ETF shares, increased by $0.11 (0.11%) from $104.98 on May 6 to $105.09 on May 9.

Still, 0.63% is much higher than 0.11%. What can possibly explain why CHFN's price *increased* on the ex-dividend day? Does it refute the general claim that the price of a stock declines on an ex-dividend day? Can frequent occurrences such as this mislead investors into a conclusion that, in general, payments of dividends can be views as picking fruit off a tree, rather than as splitting a log and burning some of its pieces in your fireplace?

Teaching note: Occurrences such as CHFN do not refute the general claim that the price of a stock declines on an ex-dividend day. But frequent occurrences such as this can mislead investors into a conclusion that, in general, payments of dividends can be views as picking fruit off a tree, rather than a splitting a log and burning some of its pieces in a fireplace.

CHFN's stock price might have increased because of specific positive information about it. That information, however, is not likely to be about the dividend itself since dividends are announced a few days before the ex-dividend day and become widely-available information. It might also be that stocks of financial companies increase on average on May 9 by more than that of VTI. And it might be that general sentiment toward CHFN turned positive that day or that purchases of the stock for liquidity reasons pushed the price higher. The price of CHFN shares increased further to $12.78 on May 10, and moved on the following days to $12.80, $12.78, and $12.74.

1. The argument favoring using company cash to repurchase shares of a company rather than using that cash to pay cash dividends is that repurchases deliver cash only to those who want it, and are generally subject to lower taxes even when the rate of taxes on capital gains equals the rate on dividends, because only a portion of the money received by investors who sell shares consists of capital gains.

   Why would a company choose to pay cash dividends rather than repurchase shares of its stock?

Teaching note: Many shareholders like dividends because they come regularly, as paychecks do, and can be easily framed as income. Selling stocks as part of a company buyback is framed as dips into capital.

An insightful article is "Investor Heterogeneity, Investor-Management Disagreement and Share Repurchases," by Sheng Huang and Anjan V. Thakor, *The Review of Financial Studies* 26, no. 10 2013. It argues that repurchases satisfy wants different from those satisfied by payments of dividends:

"This paper develops and tests a new theoretical explanation for stock repurchases. Investors may disagree with the manager about the firm's investment projects. A repurchase causes a change in the investor base as investors who are most likely to disagree with the manager tender their shares. Therefore, a firm is more likely to buy back shares when the level of investor-management agreement is lower, and agreement improves as a consequence. Moreover, dispersion of opinion among investors cannot explain repurchase activity once the stock price and investor-management agreement are controlled for. Overall, the evidence is consistent with firms strategically using repurchases to improve alignment between management and shareholders."

2. What are dividend reinvestment plans (DRIPS)? What are their costs and benefits? How are DRIPS different from reinvesting dividends in mutual funds?

   Read http://financialhighway.com/dividend-reinvestment-plans-their-benefits-2/ and search the Internet and elsewhere for other articles on the topic.

Teaching note: Both DRIPS and mutual fund dividend reinvestment plans are useful for investors who prefer to save their dividends rather than spend them. Reinvestment is done automatically, such that investors do not see money in their "income" accounts and are not tempted to spend it. But reinvestment in mutual funds is advantageous because it is cost-free whereas reinvestment of dividends from individual stocks can involve brokerage commission and bid-ask spreads.

3. What are the advantages and disadvantages of stock dividends compared to cash dividends, for companies and for shareholders?

   Read http://www.investopedia.com/ask/answers/05/stockcashdividend.asp

   http://www.bloomberg.com/news/articles/2016-07-19/china-s-curious-craze-for-stock-dividends-survives-market-slump

   http://budgeting.thenest.com/stock-dividends-vs-cash-dividends-21502.html and search the Internet and elsewhere for other articles on the topic.

   Do you agree or disagree with the views expressed in these and the other articles you find? Why or why not?

Teaching note: Selling shares of stock dividends is no different from selling shares that are not stock dividends. But selling shares of stock dividends is not framed as dipping into capital, making it psychologically easier to dip into capital by sell shares labeled stock dividends than by selling regular shares.

The following is from the Investopedia site. You can use it to illustrate the nature of arguments:

> "The benefit of a stock dividend is choice. The shareholder can either keep the shares and hope that the company will be able to use the money not paid out in a cash dividend to earn a better rate of return, or the shareholder could also sell some of the new shares to create his or her own cash dividend. The biggest benefit of a stock dividend is that shareholders do not generally have to pay taxes on the value. Taxes do need to be paid, however, if a stock dividend has an cash-dividend option, even if the shares are kept instead of the cash."

Note that, rationally, investors can always create "homemade" dividends even if they do not receive stock dividends. Selling stock dividends imposes neither higher nor lower taxes than selling shares that are not stock dividend shares.

Rationaes for stock dividends also include increased liquidity of shares, and catering to investor preferences for lower share prices.

Disposition puzzle

4. Do you recall instances where you encountered the "disposition effect" in a reluctance to realize losses on investments or cut your losses in other settings, such as choices of major in college, jobs, careers, projects, and personal relationships? How did you overcome the disposition effect? How long did it take you to overcome the disposition effect? What were the stages of overcoming the disposition effect during that time?

   Read http://www.theglobeandmail.com/globe-investor/investment-ideas/let-it-go-learn-to-live-with-investment-regret/article18917000/ for the role of regret in choices.

   Read http://www.businessballs.com/elisabeth_kubler_ross_five_stages_of_grief.htm and think of the analogy between coming to terms with a financial loss and coming to terms with dying.

Teaching note: This is a general question for class discussion that would demonstrate that the disposition effect is common in the investment arena as well as other arenas.

The stages of coming to terms with death, according to Elisabeth Kübler-Ross are denial, anger, bargaining, depression, and acceptance.

5. "Grit" is defined as perseverance and passion for long-term goals. Angela Duckworth and her co-authors found that grit accounted for an average of 4% of the variance in success outcomes, including educational attainment, grade point average, retention in the United States Military Academy, and ranking in the National Spelling Bee. Grit is not

asscoaited with IQ but is associated with the Big Five personality trait of conscientiousness. This suggests that achievement of difficult goals entails not only talent but also the sustained and focused application of talent over time.

Duckworth Angela L., Christopher Peterson, Michael D. Matthews and Dennis R. Kelly, "Grit: Perseverance and Passion for Long-Term Goals," *Journal of Personality and Social Psychology*, 92 (2007): 1087–1101

Perseverance, then, is useful. But perseverance can leads to resistance to overcoming the disposition effect, such as when we persevere in law school despites doubts about law as a career choice, only to discover years later that biology or acting would have been better choices. How can you balance the advantages of grit against the disadvantages of the disposition effect? Describe situations where you or others have encountered situations where grit had to be balanced against the disposition effect.

Watch http://www.pbs.org/newshour/bb/what-quality-do-the-most-successful-people-share-true-grit/ before you answer.

Teaching note: This question can be used to highlight the conflict between grit and the disposition effect. When should we persevere and when should be cut our losses? There is no clear answer and hindsight gets in the way. Some persevere in law studies and turn out to be successful lawyers, whereas others fail, regretting their perseverance.

Is the perspective of others useful in the choice to persevere or cut losses? Asking practicing lawyers about their choices? Asking traders about their choices?

You can conduct in class an experiment demonstrating the endowment effect or lead a discussion about it.

You might also wish to read:

http://www.brookings.edu/research/papers/2016/06/09-soft-skills-time-to-flit-the-grit-whitehurst?utm_campaign=Brookings+Brief&utm_source=hs_email&utm_medium=email&utm_content=30497484&_hsenc=p2ANqtz-8IcNOrTrcaxR4XAl_muT5gUd0uPpP2IIwn0gVZ0l_g8b-3I7WG1mm1E8-nH_PGiby-6rMkCYp4JraN7rsShnDQ3exR0A&_hsmi=30497484

Dollar-cost averaging

6. Search the internet and elsewhere for articles about dollar-cost averaging. What is your assessment of their reasoning? Here are some examples:

   https://pressroom.vanguard.com/nonindexed/7.23.2012_Dollar-cost_Averaging.pdf

   https://www.bogleheads.org/wiki/Dollar_cost_averaging

http://www.theglobeandmail.com/globe-investor/investment-ideas/lump-sum-investing-vs-dollar-cost-averaging-the-nitty-gritty/article20707395/

http://news.morningstar.com/articlenet/article.aspx?id=584313

http://www.wsj.com/articles/SB946411790485566478

Time diversification

7. Search the internet and elsewhere for articles about time diversification. What is your assessment of their reasoning? Here are some examples:

   http://www.vanguard.com/pdf/icrtd.pdf?2210045172

   http://econlog.econlib.org/archives/2008/01/the_fallacy_of.html

   http://www.nytimes.com/2016/02/13/your-money/how-much-of-your-nest-egg-to-put-into-stocks-all-of-it.html?_r=0

   http://www.jasonzweig.com/dont-let-a-market-crash-hit-you-at-the-finish-line/

   http://www.jasonzweig.com/how-now-36000-dow-the-ominous-undertone-of-rallies/

Chapter 8 – Behavioral portfolios

1. What are the differences between mean-variance portfolio theory and its mean-variance frontier, and behavioral portfolio theory and its behavioral-wants frontier?

Teaching note: This is a general question that serves to highlight materials in the chapter.

2. Nutraloaf is also known by its more descriptive name - Disciplinary Loaf. The New York State Department of Corrections and Community Supervision noted that the loaf provides all the appropriate nutrients required in an inmate's diet, and about 3,000 calories a day. A former inmate said, however, "I would taste it and just throw it away. You'd rather be without food than eat that." You can read more in:

   McKinley, Jesse. "State-Run Prisons Planning to Take a Punitive Recipe Off the Cookbooks." *New York Times,* December 18, 2014.

   http://www.nytimes.com/2015/12/18/nyregion/new-york-prisons-take-an-unsavory-punishment-off-the-table.html

   How does the Nutraloaf illustrate the differences between portfolios on the mean-variance frontier and portfolios on the behavioral-wants frontier?

Teaching note: This is an amusing example to some, and an enraging example to others of the difference between portfolios on the mean-variance frontier and portfolios on the behavioral-wants frontier. People care not only about utilitarian nutrition but also about expressive and emotional taste, smell, and the message delivered to them when the Nutraloaf is served – more demeaning than the message of a restaurant waiter who directs you to the table next to the bathroom entrance.

3. Search for items on the Internet or elsewhere about Socially Responsible Investing (SRI), Environmental, Social and Governance (ESG) investing, hedge-fund, private-equity, and other "alternative" investing, including wine and art. What do they reach us about investors' wants? Do any of these appeal to you? Why or why not?

   Here are a few examples:

http://www.forbes.com/sites/feeonlyplanner/2013/04/24/socially-responsible-investing-what-you-need-to-know/#2835704f5863

http://www.ibtimes.com/socially-responsible-investing-millennials-how-pick-retirement-funds-match-your-2133437

http://www.investmentnews.com/article/20150408/BLOG09/150409926/why-its-time-to-believe-the-hype-behind-esg-investing

http://www.cnbc.com/2014/08/20/are-you-rich-and-sophisticated-enough-for-private-funds.html

https://www.questia.com/library/journal/1G1-437785803/conspicuous-production-wine-capital-and-status

Teaching note: You can guide students in a discussion of investors' wants. Some, perhaps many, would insist that they are interested only in expected returns and risk, which is fine. But they would learn about the wants of other investors and perhaps empathize with them. You can also engage them in discussions about separating expressive and emotional benefits from utilitarian benefits. Why not buy stocks of companies that produce fossil fuels and express your opposition to fossil fuels by driving an electric car? Why not buy a low-cost index fund instead of a hedge fund and express your high social-status with a luxury car?

4. The standard argument for investing in gold is its utilitarian benefits, mostly diversification benefits. Proponents usually mention the low correlation between the returns of gold and those of other investments, such a stocks. See for example:

   http://www.financemagnates.com/executives/insights/portfolio-benefits-investing-gold/

   In the excel file "Gold-Students" you have monthly returns of gold, bonds, and stocks. Calculate the correlations between the returns of gold and bonds, gold and stocks, and bonds and stocks. What do the correlations tell us about the relative benefits of diversification between stocks and gold and stock and bonds?

   What benefits do investors find in gold beyond its utilitarian diversification benefits? Discuss with reference to: http://www.jasonzweig.com/lets-be-honest-about-gold-its-a-pet-rock/

   http://www.politico.com/story/2009/12/right-wing-talkers-go-for-the-gold-030231

Teaching note: Gold is a prominent example of an investment with utilitarian, expressive, and emotional benefits. There are utilitarian benefits to investing in gold, but it is likely that people investing in gold also derive expressive and emotional benefits.

The correlation between the returns of gold and stocks are approximately equal to the correlation between the returns of bonds and stocks, as you see in the excel file "Gold-Instructors."

Investors with high proportions of gold in their portfolios are likely politically conservative, whereas SRI and ESG investors likely tilt toward liberalism. This analysis can generate good discussion of the utilitarian, expressive and emotional benefits of investments. Do people discuss their inclination toward SRI or gold in terms of utilitarian benefits (e.g., I'll get higher returns) or in terms of expressive and emotional benefits (e.g., I'll be true to my values).

5. Imagine that your wealth consists of $100,000 in cash that you can allocate among three mutual funds, X, Y, and Z. Their expected returns are respectively 8%, 10%, and 6%, and their standard deviations are respectively 20%, 25%, and 12%. The correlation between the returns of X and Y is 0.8, the correlation between the returns of X and Z is zero, and the correlation between the returns of Y and Z is also zero. How much of the $100,000 would you allocate to each of the 3 funds. (Answer by your intuition, not by an optimizer.)

Teaching note: You can use this to replicate the experiment by Levy et al. described in the chapter. Ask one group of students the question above. Ask another group the same question but where the positive 0.8 correlation between the returns of X and Y is replaced by a negative 0.8. Are their differences in allocations between the two groups? You can discuss the tendency to overlook correlations (or perhaps not overlook them).

6. The correlation between the returns of large stocks and small stocks is 0.79. An annual return gap is an absolute value of the difference between the annual returns of two investments (i.e. without regard to which is higher and which is lower).

   Think about the gap between the returns of large stocks and small stocks in a typical year. What is your estimate of the typical return gap?

   a. Higher than 6 percentage points?

   b. Between 3 and 6 percentage points?

   c. Between 1 and 3 percentage points?

   d. Lower than 1 percentage point?

   The excel file "Gaps-Students" includes annual returns of large capitalization stocks and small capitalization stocks during 1926-2014. Calculate the actual return gap for each year from 1926 through 2014.

What are the mean and median actual annual return gaps?

What is the greatest actual annual return gap and what is the smallest?

How similar are actual mean and median return gaps to your estimate of typical return gaps?

The estimated return gap between the returns of two assets is:

$$\text{Estimated Return Gap} = 2\sigma\sqrt{\frac{(1-\rho)}{2}}$$

Where σ is the average of the standard deviations of the returns of the two investments, and ρ is the correlation between the returns of the two investments.

Teaching note: You have the "Gaps-Instructors" file. You can use this exercise to demonstrate the use of return gaps as a measure of the benefits of diversification. You can ask students to makes similar estimates and do similar calculations for each pair among the 5 investments. They will see the need to consider standard deviations, not only correlations, when assessing the benefits of diversification.

7. Examine your investment portfolio. By what rationale and process did you form your portfolio? For example, did you plan particular allocations to stocks, bonds, and other investments in the portfolio as a whole, or does the portfolio reflect an eclectic accumulation of investments? Did you consult about the allocations in your portfolio with a financial adviser, friends, family, and colleagues, questionnaire of a mutual fund, or elsewhere? Do you think of one portion of your portfolio as dedicated to one goal, such as retirement, and other portions as dedicated to other goals, such as education or down payment for a house?

Teaching note: This can be the beginning of a discussion about how people think about portfolios and form them. You can relate students' experiences to standard and behavioral portfolio theories.

8. Search the Internet and elsewhere for items on core and satellite portfolios. Examples include:

   http://www.vanguard.com/pdf/icrcs.pdf

   https://blogs.cfainstitute.org/investor/2012/08/02/simple-safe-and-cost-effective-using-a-coresatellite-approach-in-your-401k-2/

How are core and satellite portfolios related to behavioral portfolios? What are the advantages and disadvantages of constructing portfolios as core and satellite portfolios compared to constructing them as a whole, with no distinctions between core and satellite?

Teaching note: A good way to introduce students to common rebalancing practice and discussions about mean-variance portfolios as a whole, and behavioral portfolios as pyramids of goals. Search the Internet and elsewhere for items about pension funds attempting to reach the funding target, where their assets match their liabilities to pension beneficiaries. Why is the pension fund situation of some funds described as a crisis? What are the reasons for the crisis and how can it be solved? How are some attempts to solve the crisis related to shortfall-aversion and its consequences?

Examples include:

http://knowledge.wharton.upenn.edu/article/underfunded-pensions-tackling-an-invisible-crisis/

http://www.saturna.com/education/yardarm/2012/20120402.shtml

http://www.wsj.com/articles/pension-funds-pile-on-the-risk-just-to-get-a-reasonable-return-1464713013

Teaching note: The aspect related directly to the chapter is the use of and danger of high risk portfolios as a solution to a crisis where liabilities greatly exceed assets. But this question can also be the basis for a general discussion about funding shortfalls in pension funds, why they occur, and how they can be resolved. There is an incentive for politicians to offer high benefits to beneficiaries of public pensions but not fund them. One solution is to replace defined-benefit pensions with defined-contribution savings plans. This is what corporations have been doing for more than 2 decades.

9. Please answer the following questions:

   Job question: Suppose that you are the only income earner in the family, and you have a good job guaranteed to give you and your current family income during your lifetime. Now you are given an opportunity to take a new and equally good job. The new job has a 50-50 chance to increase by 50% your standard of living during your lifetime. However, the new job also has a 50-50 chance to reduce by X% your standard of living during your lifetime. What is the maximum X% reduction in standard of living you are willing to accept?

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70%

   Portfolio question: Suppose that you are given an opportunity to replace your current investment portfolio with a new portfolio. The new portfolio has a 50-50 chance to increase by 50% your standard of living during your lifetime. Yet the new portfolio also

has a 50-50 chance to reduce by X % your standard of living during your lifetime. What is the maximum X% reduction in standard of living you are willing to accept?

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70%

Are these questions about variance-aversion, loss-aversion, or shortfall-aversion?

Are these questions about variance-aversion, loss-aversion, or shortfall-aversion?

Is your X% number in the job question different from your X% number in the portfolio question? Why or why not?

What can be the personal circumstances or rationales of people choosing *higher* X% numbers that you did?

What can be the personal circumstances or rationales of people choosing *lower* X% numbers that you did?

Teaching note: The ratio of 50% gain to X% loss is likely greater than 2 or 2.5, often used as the common loss-aversion ratio. Why? Likely because the stakes here are large. Verify by asking them about choice when small stakes are involves. What is the maximum loss you are willing to accept in a 50-50 chance to have a $50 gain? Answers are likely $20 or perhaps more. Now ask them: What is the maximum loss you are willing to accept in a 50-50 chance to have a $5,000 gain? Answers are likely less than $2,000.

Chapter 9: Behavioral life-cycle of saving and spending

1. In what ways is behavioral life-cycle theory similar to standard life-cycle theory and in what ways is it different?

Teaching note: This question can be the basis for a preliminary discussion of the two theories. The two are similar in their focus on accumulation and decumulation (saving and spending) rather than on the construction of portfolios. They are different in ways described in the chapter. It is interesting to note that while portfolio theory is at the center of typical investment textbooks, these books rarely mention saving and spending. These are relegated to personal finance textbooks. Why is that?

2. Search the Internet and elsewhere for information about the ways young athletes and actors are different in saving and spending behavior from people in other professions such as teachers, engineers, or policemen. What do advisers do to help young athletes and actors? Discuss with reference to standard life-cycle and behavioral-life cycle theories and the roles of self-control and outside-control by advisers.

   How is the problem confronting retired people with accumulated savings similar to the problem facing athletes? How can advisers help retirees solve this problem?

   Read for example: http://athletewealth.com/

   http://www.wsj.com/articles/SB10001424052702304117904579501340429887148

   http://www.investmentnews.com/article/20150615/FREE/150619958/7-risks-for-retirement-income-planning

   http://www.cnbc.com/2015/01/30/3-biggest-challenges-facing-retirement-savings.html

Teaching note: Young athletes and actors are different from teachers, engineers, or policemen in very high income during short periods when they are young and playing in their sports or films, but not later. This early income provides high lifetime wealth that, according to standard life-cycle theory, would be spent approximately evenly during their lifetimes. But it is not.

Instead, it tends to be spent as it is earned, leaving little or nothing for the future. Many go bankrupt. Issues of self-control are central to the story. Advisers help by providing outside control, such as controlling earnings and providing athletes with a "salary" that is low enough to be sustained over a lifetime.

Retirees faces a similar problem. They have accumulated savings (in addition to Social Security and perhaps pensions) and are concerned that they might deplete it too fast. Advisers help by providing "salary" guidelines and perhaps direct control over that salary.

3. Search the Internet and elsewhere for the ways poverty affects self-control and influences saving and spending decisions. What can be done to help the poor now and in retirement?

   Read for example:

   https://newrepublic.com/article/89377/poverty-escape-psychology-self-control

   http://theconversation.com/its-not-a-lack-of-self-control-that-keeps-people-poor-47734

   http://www.theatlantic.com/business/archive/2013/11/your-brain-on-poverty-why-poor-people-seem-to-make-bad-decisions/281780/

Teaching note: Discussions about poverty are likely to uncover ideological differences among students and divides between Democrats and Republicans, liberals and conservatives. An analysis by Alesina and Angeletos is useful (Alesina, Alberto, and George-Marios Angeletos. 2005. "Fairness and Redistribution." *American Economic Review* 95 (4): 960–980). They observed that income redistribution in the United States is relatively meager, whereas it is relatively generous in continental Western Europe. They attributed the difference, at least in part, to different cultures, adhering to different rules of fairness and different perceptions of the sources of income inequality. Americans lean toward the belief that income and wealth come mostly from hard work, whereas Europeans lean toward the belief that income and wealth come mostly from luck. They noted that the World Value Survey found that 71% of Americans believe that the poor could become rich if they just tried hard enough, whereas only 40% of Europeans share that belief.

Alesina and Angeletos argued that the American and European systems of beliefs and redistribution policies can exist side by side. On one side of the Atlantic, the prevalent American belief that income and wealth come mostly from hard work promotes policies of low taxes and meager redistribution. Consequently, Americans, knowing that they will not be supported by the rich, work hard and accumulate more wealth than they otherwise would. This perpetuates the belief that income and wealth come mostly from hard work. On the other side of the Atlantic, the prevalent European belief that income and wealth come mostly from luck promotes policies of high taxes and generous redistribution. Consequently, Europeans, knowing

that they will be supported by the rich, do not work as hard and accumulate less wealth. This perpetuates the belief that income and wealth come mostly from luck.

Views in the U.S. are changing, however, evident in the 2016 presidential election campaigns. Many believe that the economy is "rigged" such that some people get rich and others who work hard remain poor.

4. Search the Internet and elsewhere for items about commitment saving programs. What are some examples of successful programs and unsuccessful ones? Commitment savings programs are nudges toward voluntary savings. Would shoves into mandatory savings be more effective? Read, for example:

   http://www.poverty-action.org/study/psychology-savings-commitment-savings-programs-philippines

   https://www.povertyactionlab.org/evaluation/cares-commitment-savings-smoking-cessation-philippines

   http://wol.iza.org/articles/products-and-policies-to-promote-saving-in-developing-countries.pdf

   http://econ.worldbank.org/external/default/main?theSitePK=469382&contentMDK=22975610&menuPK=574960&pagePK=64165401&piPK=64165026

   http://www.virginia529.com/soar/

Teaching note: These are a good basis for discussions about commitment devices and their effectiveness. How effective are they really? A statistically significant improvement is not necessarily and economically significant improvement. What are the advantages and disadvantages of voluntary nudging and mandatory shoving? Is a mandatory system feasible in the U.S?

5. Search the Internet and elsewhere for comparisons between Defined-Benefit Pension Plans (DB) and Defined-Contribution Retirement Savings Plans (DC). What are the advantages and disadvantages of each?

   Read, for example:

   http://www.njspotlight.com/stories/14/05/27/explainer-the-debate-over-defined-benefit-vs-defined-contribution-pensions/

   http://pensionretirement.com/which-is-better-defined-contribution-vs-defined-benefit-pensions/

http://blog.independent.org/2013/08/06/defined-benefit-or-defined-contribution-which-is-the-better-way-to-structure-government-pensions/

http://www.ncpers.org/files/2011_ncpers_research_series_top_ten.pdf

Teaching note: Discuss why DB plans are being phased out. Discuss pension funding shortfalls, including the unique problems of public pension funds where unions and politicians agree to arrangements paid for by taxpayers. Discuss also features of DC plans that allow "leakages" by employees who cash DC accounts or borrow from them.

6. Search the Internet and elsewhere about financial literacy, programs promoting it among children and adults, and assessments of its effectiveness. What are differences between financial literacy, financial comprehension, and behavior demonstrating financial comprehension?

   Read, for example,

   https://www.treasury.gov/resource-center/financial-education/Pages/commission-index.aspx

   http://www.cnbc.com/2016/01/28/us-schools-get-failing-grade-for-financial-literacy-education.html

   http://www.usatoday.com/story/money/personalfinance/2014/04/08/financial-literacy-college-students/7296185/

   http://money.usnews.com/money/blogs/alpha-consumer/2014/08/07/5-things-to-know-about-financial-literacy

   http://usatoday30.usatoday.com/money/perfi/basics/story/2012-04-23/millenials-financial-knowledge/54494856/1

   http://www.slate.com/articles/business/moneybox/2015/01/financial_literacy_it_s_noble_but_way_less_important_than_actual_consumer.html

Teaching note: People might well disagree about what financial comprehension is. There is no perfect agreement about financial truth among academics and between academics and practitioners. Some will argue that choosing active funds instead of passive ones indicates financial comprehension rather than lack of comprehension.

The same is true in medicine, where a debate goes on whether prostate-specific antigen (PSA) test are advisable or not.

7. Search the Internet and elsewhere for items about dividend-capture funds.

   Read, for example:

   http://www.thestreet.com/story/11535525/1/7-best-choices-for-dividend-capture.html

   http://www.morningstar.com/cover/videocenter.aspx?id=356587

   http://www.bloomberg.com/news/articles/2007-04-15/funds-for-the-dividend-junkie

   http://blogs.wsj.com/moneybeat/2014/12/05/juicing-stock-returns-and-getting-squeezed/

   What are the objectives of dividend-capture funds? Why might some investors choose them? Would you choose them? Why or why not?

Teaching note: A good way to discuss investors' desire for generating income without transparent dips into capital. It is, however, an expensive way to do so.

A question separating standard life-cycle theory from behavioral life-cycle theory asks whether we distinguish capital from income as we make spending choices. Standard life-cycle theory predicts that we do not, because dollars of capital are indistinguishable from dollars of income in the total of our life-cycle wealth. Behavioral life-cycle theory predicts, however, that we do make the distinction, and are ready to spend income but reluctant to dip into capital and spend its proceeds.

8. Search the Internet and elsewhere for items about covered call options.

   Read, for example:

   http://stansberryresearch.com/investor-education/selling-covered-calls/

   http://www.forbes.com/sites/baldwin/2012/07/17/covered-calls-what-works-what-doesnt/#498bbf4259b8

   What are the objectives of covered calls? Why might some investors choose them? Would you choose them? Why or why not?

Teaching note: This is similar to the earlier question about dividend-capture funds. Covered calls are another way to generate income opaquely, obscuring dips into capital.

9. What are managed payout funds? What benefits do they provide? How costly are those benefits? What are the similarities and differences between managed payout funds and dividend capture funds and covered calls?

Read, for example:

https://investor.vanguard.com/mutual-funds/managed-payout/#/

http://www.advisorperspectives.com/articles/2015/07/28/are-managed-payout-funds-better-than-annuities

Teaching note: Managed payout funds are superior to dividend capture funds and covered calls because they are less costly. But they do not obscure dips into capital as well as dividend capture funds and covered calls. Other alternatives include using financial advisers who control spending and suggest reasonable spending guidelines, as well as externally and internally enforced rules such as the Required Minimum Distribution (RMD) table, tracking life expectancy.

See the following for an RMD table

https://www.irs.gov/pub/irs-tege/uniform_rmd_wksht.pdf

10. What are the differences between suitability standards and fiduciary standards governing the behavior of financial advisers in their work with clients?

    Read, for example:

    http://www.cnbc.com/2015/11/18/new-fiduciary-rules-whose-interests-come-first.html

    http://www.institutionalinvestor.com/article/3544744/asset-management-regulation/new-dol-fiduciary-rule-creates-opportunities-for-fund-industry.html?ArticleId=3544744#/.Vxkv8jArKM8

    http://www.nytimes.com/2016/04/07/your-money/new-rules-for-retirement-accounts-financial-advisers.html

Teaching note: This is an opportunity to learn about potential conflicts of interest between advisers and investors and attempts to address them. It might also highlight differences between ideologies and notions of fairness. Both suitability and fiduciary standards are paternalistic but fiduciary standards are more paternalistic.

11. Search the Internet and elsewhere for items about how economically prepared Americans are for retirement. Why are there such wide differences between the popular press reports emphasizing lack of preparation and academic literature showing wide a range of preparation? Which interest groups have interests in this debate, such as in promoting the conclusion that we have a retirement crisis?

Read, for example,

http://www.reuters.com/article/us-usa-economy-retirement-idUSKBN0OC23O20150527

https://www.americanprogress.org/issues/economy/report/2015/01/26/105394/the-reality-of-the-retirement-crisis/

http://www.reuters.com/article/us-column-sternadvice-retire-idUSBRE9B30HL20131204

http://theweek.com/articles/451476/americas-retirement-crisis-might-not-bad-thought

Teaching note: The retirement crisis is real for many but solutions are difficult to find and even more difficult to implement because of conflicting ideologies and interests. Corporations move from DB to DC for a number of reasons, but saving money is a prominent one. Corporations pay less into DC than DB.

See for example Rauh, Joshua D., Irina Stefanescu, and Stephen P. Zeldes, "Cost Shifting and the Freezing of Corporate Pension Plans." *FEDS Working Paper No. 2013-82* (August 31, 2013). Available at SSRN: http://ssrn.com/abstract=2357987 or http://dx.doi.org/10.2139/ssrn.2357987

Helping the poor, such as by increasing Social Security payments to them, would have to come from those who are better off.

Should we subsidize the poor? Remove tax benefits for rich? Expand social security?

https://www.irahelp.com/slottreport/final-obama-budget-proposal-heavy-retirement-account-changes-again

http://www.forbes.com/sites/jamiehopkins/2015/02/04/president-obamas-2016-budget-sends-mixed-messages-on-retirement-planning/#4d0cdb6b7682

http://www.latimes.com/business/hiltzik/la-fi-mh-warren-20131121-story.html

Chapter 10 – Behavioral Asset Pricing

1. The prices of cars range widely, from low 5-figures to high 6-figures and even 7-figures. The price of a Toyota Corolla is approximately $17,000, that of a Rolls Royce Phantom is approximately $418,000, and that of a Lamborghini Veneno is approximately $4,500,000.

   Think about a pricing model of cars, associating car prices with its features and characteristics. What are some features and characteristics that account for the difference in price between a Toyota Corolla and a Rolls Royce Phantom, and between a Rolls Royce Phantom and a Lamborghini Veneno?

   Describe the utilitarian, expressive and emotional benefits of each features and characteristic.

   What do car manufacturers do to enhance the utilitarian, expressive, and emotional benefits of their cars?

   How do car manufacturers and car sellers exploit the cognitive and emotional errors of car buyers?

   Read, for example, http://www.realcartips.com/scams/

   http://money.usnews.com/money/personal-finance/articles/2014/01/17/6-car-buying-mistakes-to-avoid

Teaching note: Utilitarian benefits include transportation, common to all three cars, expressive benefits include high social status common to the Rolls Royce and Lamborghini, and emotional benefits include exhilaration, a benefit of a Lamborghini but perhaps not of a Rolls Royce, and surely not of a Toyota.

The line that separates wants from errors is not always clear. Car sellers exploit money illusion errors with leasing terms that hide true interest rates, and they exploit framing error by framing discussions in terms of monthly payments rather than implied interest rates.

Car manufacturers exploit affect errors by photographing cars in attractive settings (e.g., a mansion or airplane as a background for a Rolls Royce, a party of young people as a background for a Toyota, or a winding road as background for a Lamborghini.

You can construct similar questions about houses, restaurants, universities and any other products or services.

2. We can choose factors and characteristics for asset pricing models by theory, empirical evidence, or a combination of both. The rationales for factors and characteristics in asset pricing models can be standard, limited to utilitarian benefits, or behavioral, extending beyond utilitarian benefits to expressive and emotional ones, and extending further to cognitive and emotional errors. The rationales for some factors, such as small-large and value-growth might be standard or behavioral. Sometimes, however, the rationale for factors is difficult to determine, even when there is a strong empirical association between a factor and returns. This is the case of the profitability factor. What are possible rationales for the profitability factor? Search the Internet and elsewhere for discussions about the profitability factor.

   Read, for example,

   http://www.forbes.com/sites/phildemuth/2014/01/20/whats-up-with-fama-frenchs-new-5-factor-model-the-mysterious-new-factor-v/#22f85b884f00

   https://www.ifa.com/articles/profitability_four-factor_model/

   http://blog.oup.com/2016/01/investment-facts-from-flukes/

   http://www.slate.com/articles/business/moneybox/2014/11/duke_economist_campbell_harvey_most_research_on_why_investments_do_well.html

   http://www.jasonzweig.com/have-investors-finally-cracked-the-stock-picking-code/

3. Risk-free arbitrage occurs when we buy an item at one price and simultaneously sell it or its perfect equivalent at a higher price. The binomial and Black-Scholes option pricing models are based on risk-free arbitrage. But the term arbitrage is used also when it is not risk-free. Closed-end fund arbitrage is one example.

   What are examples of arbitrage and why might it fail to eliminate the effect of wants and errors on securities prices?

   Search the Internet and elsewhere for items about risk-free and risky arbitrage, their effects and their limitations.

   Read, for example:

   http://www.clarityspring.com/6-hedge-fund-arbitrage-strategies-that-arent-arbitrage/

   http://www.valuewalk.com/2014/08/closed-end-fund-arbitrage/

   http://seekingalpha.com/article/697511-arbitrage-opportunity-in-the-closed-end-fund-space

4. Excel file “factors-Students” includes monthly factor returns of 5 factors, market, small-large, value-growth, profitability, and investment. Factor returns are returns minus Treasury-bill returns that proxy for the risk free returns. It also includes monthly returns minus Treasury-bill returns of four mutual funds:

   VISGX - Vanguard Small Capitalization Growth Index Fund

   VISVX - Vanguard Small Capitalization Value Index Fund

   VUVLX - Vanguard US Value

   VIGRX - Vanguard Growth Index Fund

   Examine the returns minus Treasury-bill returns of each mutual fund by the CAPM, 3-factor model, and 5-factor model. What are the betas of each factor according to each model? How do you interpret the betas? Are the betas consistent with the names of the funds? How are the betas similar or different across the 3 models?

Teaching note: You have the “Factors-Instructors” file. The betas are consistent with the names of the funds. The alphas (intercept) would be used later in Chapter 11 to illustrate the joint hypothesis.

Chapter 11: Behavioral efficient markets

1. What are the two versions of efficient markets and how do they differ? Are bubbles a violation of one or the other?

Teaching note: This question allows review of the two versions, price-equals-value and hard-to-beat.

2. Rana Foroohar wrote about saving capitalism in the *Time* magazine issue of May 2016. (American Capitalism's Great Crisis Rana Foroohar Time magazine, May 12, 2016)

   In one part of the article she wrote:

   "The rise of finance has also distorted local economies. It's the reason rents are rising in some communities where unemployment is still high. America's housing market now favors cash buyers, since banks are still more interested in making profits by trading than by the traditional role of lending out our savings to people and businesses looking to make long-term investments (like buying a house), ensuring that younger people can't get on the housing ladder. One perverse result: Blackstone, a private-equity firm, is currently the largest single-family-home landlord in America, since it had the money to buy properties up cheap in bulk following the financial crisis. It's at the heart of retirement insecurity, since fees from actively managed mutual funds "are likely to confiscate as much as 65% or more of the wealth that … investors could otherwise easily earn," as Vanguard founder Bogle testified to Congress in 2014."

   In another part of the article she wrote:

   "Remooring finance in the real economy isn't as simple as splitting up the biggest banks (although that would be a good start). It's about dismantling the hold of financial-oriented thinking in every corner of corporate America. It's about reforming business education, which is still permeated with academics who resist challenges to the gospel of efficient markets in the same way that medieval clergy dismissed scientific evidence that might challenge the existence of God."

How do the two paragraphs relate to the two versions of the efficient market hypothesis, price-equals-value and hard-to-beat? Do the versions of efficient market hypothesis in the two paragraphs complement or contradict each other?

Teaching note: The first paragraph relates to the hard-to-beat version. Bogle says, in effect, that the hard-to-beat version is true, implying that individuals saving for retirement and have nothing but widely-available information should not try to beat the market on their own or by hiring managers who direct all their market-beating gains to themselves.

The second related to the price-equals-value form. Claims that markets are efficient in this form are a basis for arguments that markets need no regulation.

The two paragraphs can be reconciled if the price-equals-value version is false but the hard-to-beat version is true.

3. How are the weak, semi-strong and strong forms of the efficient market hypothesis related to the exclusively-available, narrowly-available, and widely-available information forms?

Teaching note: This question allows review of the three forms of the market efficiency hypotheses in standard and behavioral finance. The strong form corresponds to the exclusively-available form and to some aspects of the (very) narrowly-available form. For example, inside information known only to the CEO of a company, in which case it is exclusively-available information, or to a group of insiders, in which case it is (very) narrowly-available information. The semi-strong form corresponds to the narrowly-available form (but not very narrowly-available form) and to widely-available information. For example, publication in *Nature* makes information not as narrowly-available as information available only to a group of insiders, but publication in *Nature* still makes information less widely-available than publication in *The New York Times*. The weak form generally corresponds to the widely-available form because it is easy to find a series of past prices and volume of trade.

4. "Why do active investors continue to play a negative sum game?" asked Kenneth French, referring to investors with nothing but widely-available information. What is French's answer? Read the conclusion of French's article, "The cost of Active Investing" http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1105775

Teaching note: French wrote – "Whether fund of fund investors break even or not, a passive market portfolio produces a higher return than the aggregate of all active portfolios. Why do active investors continue to play a negative sum game? Perhaps the dominant reason is a

general misperception about investment opportunities. Many are unaware that the average active investor would increase his return if he switched to a passive strategy.

Financial firms certainly contribute to this confusion. Although a few occasionally promote index funds as a better alternative, the general message from Wall Street is that active investing is easy and profitable.

This message is reinforced by the financial press, which offers a steady flow of stories about undervalued stocks and successful fund managers.

Overconfidence is probably the other major reason investors are willing to incur the extra fees, expenses, and transaction costs of active strategies. There is evidence that overconfidence leads to active trading. (See, for example, Odean (1998), Barber and Odean (2001), and Statman, Thorley, and Vorkink (2006).) Investors who are overconfident about their ability to produce superior returns are unlikely to be discouraged by the knowledge that the average active trader must lose.

Statman (2004) offers another behavioral explanation for active investing. He suggests that, in addition to expected return and risk, investors are concerned with what he calls the expressive characteristics of their portfolios. Thus, some investors may accept a lower expected return in exchange for the bragging rights that come with a fund that has performed well. Others may give up the low cost and diversification of a passive mutual fund for the prestige of their own separate account.

Finally, some investors trade actively because they really are able to produce superior returns.

The existence of superior investors, however, does not explain the behavior of the average investor.

Active investing is still a negative sum game. Every dollar a superior investor earns must increase the aggregate losses of all other active investors."

5. The Law of One Price is the hypothesis that identical items sell at identical prices. How is the Law of One Price related to the price-equals-value and hard-to-beat versions of the efficient market hypothesis? What might prevent the Law of One Price from being consistent with the evidence? Read, for example, http://www.forbes.com/sites/timworstall/2013/02/02/the-great-norwegian-diaper-shortage-of-2013-ricardos-iron-law-of-one-price/#6aa01811c522

   "Anomalies: The Law of One Price in Financial Markets," Owen A. Lamont and Richard H. Thaler

   Journal of Economic Perspectives, 17, no. 4, Fall 2003: 191-202.

   http://pubs.aeaweb.org/doi/pdfplus/10.1257/089533003772034952

Teaching note: The Law of One Price is consistent with the prediction of the price-equals-value version of the efficient market hypothesis. It implies, for example, that three identical bonds will sell at one price, although it does not fully correspond to the hypothesis because it does not specify that the one price be equal to intrinsic value.

The Law of One Price might be consistent with the hard-to-beat efficient market hypothesis, as traders who engage in arbitrage beat the market as they attempt to exploit deviations of prices from intrinsic values. But arbitrage might be hampered by costs, making the market hard-to-beat but not price-equals-value.

The Law of One Price might also be hampered by lack of information – e.g. when investors do not know that the same mutual fund with lower fees is available.

6. The following article finds that dividends account for 60% of stock returns. http://seekingalpha.com/article/3922426-dividend-income-accounts-60-percent-equity-returns?page=2

   Shareholders receive cash from companies mostly in the form of dividends, but also in other forms such as cash paid to shareholders when a company is sold. How are dividends related to the intrinsic values of shares? How much of equity returns are likely accounted for by dividends in short periods, such as one year, and long periods, such as 100 years?

Teaching note: Dividends account for all of the intrinsic value of a share. Investors who hold shares for short periods receive their returns in the form of dividends and capital gains, but capital gains are capitalized future dividends. Otherwise, we have stock values as a form of "greater fool theory," where people buy stocks that will never pay dividends in the hope that others would buy these stocks from them at higher prices. This, for example, is the case of gold.

7. Search the Internet and elsewhere for "stock market forecasts." For example,

   http://www.barrons.com/articles/stocks-could-rise-10-in-2016-according-to-market-strategists-1449899461

   http://www.tradingeconomics.com/forecast/stock-market

   http://www.forbes.com/sites/trangho/2015/11/13/2016-stock-market-outlook-why-wall-street-expects-7-11-upside/#3994d9447cc1

   How accurate did forecasts turn out to be?

Teaching note: These offer a good lesson on the frailty of forecasts and the difficulty of beating the market.

The Stocktrak.com simulation is a good way to demonstrate the frailty of forecasts. Ask students to form portfolios at the beginning of a quarter and tell them that the goal is to maximize the Sharpe ratio. You can hold the Vanguard Total Stock Market Index fund.

8. What is the joint hypothesis?

   You have the file "Factors-Students" from Chapter 10, and you calculated regressions of each of 4 mutual fund by the CAPM, 3-factor, and 5-factor asset pricing models. The "alpha" of each fund by each asset pricing model is its excess returns. (The estimated alpha of each fund by each asset pricing model is the intercept of the regression)

   Look at the alphas of each fund by each of the asset pricing models. Are the alphas of each fund the same by the 3 models or are they different? What do the alphas tell us about market efficiency? How do they illustrate the joint hypothesis?

Teaching note: You have the "Factors-instructors" file. You will see that the alphas of each fund vary by the asset pricing model. For example, the alpha of VISVX - small value fund – is negative by the CAPM, suggesting that it was beaten by the market, but positive by the 3-factor model, suggesting that it beat the market. This illustrates the joint hypothesis point that conclusions about the efficient market hypothesis depend on the capital asset model used. (Discuss the statistical significance of alphas as well).

FNCE 3462 **Meir Statman**

Behavioral Finance ***Fall 2016***

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Overview

Behavioral finance is finance for normal people. People like you and me. Standard finance, in contrast, is finance for rational people.

Normal people are not irrational. Indeed, we are mostly intelligent and usually normal-smart. Sometimes, however, we are normal-ignorant, lacking financial-facts and human-behavior knowledge, or normal-foolish, misled by cognitive and emotional errors such as hindsight and overconfidence, exaggerated fear and unrealistic hope.

This course is about what we, normal consumers, savers, investors, and managers, want as we make financial choices, what we know, think and feel about financial choices, how we behave, and how our behavior affects financial markets and is reflected in them.

This course is also about transformation from normal-ignorant to normal-knowledgeable, learning the lessons of behavioral finance and applying them to banish ignorance, gain knowledge, and increase the ratio of smart to foolish behavior on our way to what we want.

Textbooks and other course materials

Statman - FNP Book

Finance for Normal People: Behavioral Finance and Investors, Managers, and Markets (Draft of a book to be published by Oxford University Press)

Statman - FNP Student Manual

The FNP book, student manual, and all other course materials are on the course page on Santa Clara's CAMINO network.

Guest speakers

I want to make sure that this course is grounded in the reality of normal people and in the reality of financial practice. You will hear from a number of investment professionals in a number of sessions, and you would have opportunities to engage in conversations with them.

Evaluation

Your course grade will be based on the quality of your submitted homework assignments (50%) and the term paper (50%). Typical papers would be 15 pages of text, double spaced, although there are no limits on length. Papers are to be submitted on **November 28**.

Homework would be submitted on dates I will specify as we proceed. I want to keep the schedule flexible because of the schedules of guest speakers. But you will have at least a week before submitting your homework.

Some of you would have an opportunity to present your papers briefly at the end of the course. If more volunteer to present that time allows, I'll choose presenters by lottery from among volunteers.

Term paper

The term paper will combine academic and professional literature with empirical work using data, experiments, questionnaires, and interviews.

I would like you to suggest one or more topics for the term paper and I will help you choose a topic and guide you as you work on the paper. Your own community or company is a natural setting for the term paper but it need not be the setting.

The topic of the term paper would be centered on finance, defined broadly.

Some examples:

Evaluation of investment apps (e.g. Mint, Betterment) How useful are they? Do they help investors overcome cognitive and emotional errors or do they reinforce and exploit errors?

Evaluation of mutual fund and other investment advertising (e.g. in Money, Kiplinger, Barron's, Forbes) How useful are they? Do they help investors overcome cognitive and emotional errors or do they reinforce and exploit errors?

Evaluation of advice given or implied in investment publications (e.g. American Asocition of Individual Investors-AAII, Wall Street Journal, MarketWatch) How useful are they? Do they help investors overcome cognitive and emotional errors or do they reinforce and exploit errors?

Evaluation of investor 'risk questionnaires.' Do they measure what should be measured? Do they miss anything that should be measured? Do they all offer the same portfolio recommendations?

Culture in financial choices and behavior (e.g. Differences in choices between first generation American-born Chinese-Americans and immigrant Chinese-Americans). How do savings, spending, and investing habits differ?

Distinctions between capital and income and methods for converting income to capital and capital to income. (e.g. extra dividends, high yield bonds, covered calls)

Investor sentiment. What makes investors bullish and bearish? How useful are sentiment measures in predicting the stock market? (e.g. AAII sentiment, Consumer Confidence surveys)

Socially responsible investing. Who is attracted to it? How does it work? How successful is it in delivering utilitarian, expressive, and emotional benefits?

Difficulties in realizing investment losses and methods to overcome them. (e.g. interview friends and money managers)

Difficulties in terminating corporate investment projects and methods to overcome them (e.g. interview executives and others in corporations)

Optimistic capital budgeting and cost and time overruns? Where does it happen? Why?

Retirement savings around the world. Comparing the U.S. system to the Australian system. Is nudging people into retirement savings sufficient? Is there a need for mandatory retirement savings? Should people be allowed to borrow or withdraw money early?

Financial literacy around the world. How do we measure financial literacy? How should we measure it? How effective is financial literacy in improving financial behavior?

How do people form investment portfolios? Do they divide their investment equally among funds? Do they follow advice from mutual fund companies or advisors?

Couse Outline

September 19

Read:

Statman (FNP) - **Introduction: What is behavioral finance?**

Statman (FNP) - **Chapter 1: Normal people**

Statman (FNP) - **Chapter 12: Lessons of behavioral finance**

Submit answers to questions of Chapter 1: 1-4, 6, 8-9, 16

September 21

Read:

Statman (FNP) - **Chapter 2: Wants of utilitarian, expressive, and emotional benefits**

Submit answers to questions of Chapter 2: 1, 2-3, 5, 7, 9, 17

September 26, 28, 30

Read:

Statman (FNP) - **Chapter 3: Cognitive shortcuts and errors**

Submit answers to questions of Chapter 3: 1-4, 7-8,

13, 15, 17-18, 21, 24

October 3

Read:

Statman (FNP) - **Chapter 4: Emotional shortcuts and errors**

Submit answers to questions of Chapter 4: 1, 3, 4-6, 9, 11-12

October 5

Read: Statman (FNP) - **Chapter 5: Correcting cognitive and emotional errors**

Submit answers to questions of Chapter 5:

October 10, 12

Read:

Statman (FNP) - **Chapter 6: Emotional well-being, life-evaluation, and choices: Expected Utility Theory and Prospect Theory**

Submit answers to questions of Chapter 6: 1, 5-6, 7-9

October 17, 19

Read:

Statman (FNP) - **Chapter 7: Behavioral Finance in: The dividend puzzle, the disposition puzzle, and the puzzles of dollar-cost-averaging and time-diversification**

Submit answers to questions of Chapter 7: 1, 3, 6-10

October 24, 31

Read:

Statman (FNP) - **Chapter 8: Behavioral portfolios**

Submit answers to questions of Chapter 8: 1-4, 6, 9

November 2

Read:

Statman (FNP) - **Chapter 9: Behavioral life-cycles of saving and spending**

Submit answers to questions of Chapter 9: 1-2, 5-6, 8, 11

November 7, 9

Statman (FNP) - **Chapter 10: Behavioral asset pricing**

Submit answers to questions of Chapter 10: 1-4

November 14, 16

Statman (FNP) - **Chapter 11: Behavioral market efficiency**

Submit answers to questions of Chapter 11: 1-4, 8

No classes on November 21, 23 (Thanksgiving recess)

November 28

Presentations of term papers