Understanding Risk from a Fiduciary and Behavioral Standpoint

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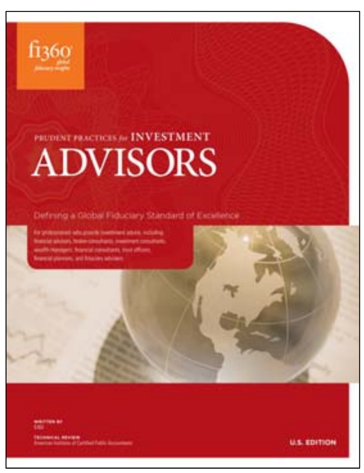
Understanding Risk is a Due Care Obligation

- The duty of due care requires fiduciaries to act with the skill, diligence, and good judgment that is reasonably expected of others serving in a similar capacity
- “Generally Accepted Investment Theories” are investment concepts that are widely embraced by prudent experts
- What is “generally accepted” changes over time; professionals are obligated to keep current
- This webinar addresses new developments in our understanding of risk tolerance

Prudent Practices



Practice 2.2

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- **An appropriate risk level has been identified for each client.**
  - 2.2.1 The level of volatility the client's portfolio is exposed to is understood by the Investment Advisor and communicated to the client, and the quantitative and qualitative factors that were considered are documented.
  - 2.2.2 "Large loss" scenarios have been identified and considered in establishing each client's risk tolerance level.
  - 2.2.3 Expected disbursement obligations and contingency plans have been considered in order to establish liquidity requirements for the portfolio.
  - 2.2.4 In the case of a defined contribution retirement plan client, the investment options provide for a reasonable range of participant risk tolerance levels.

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"Probable Return" Scenario

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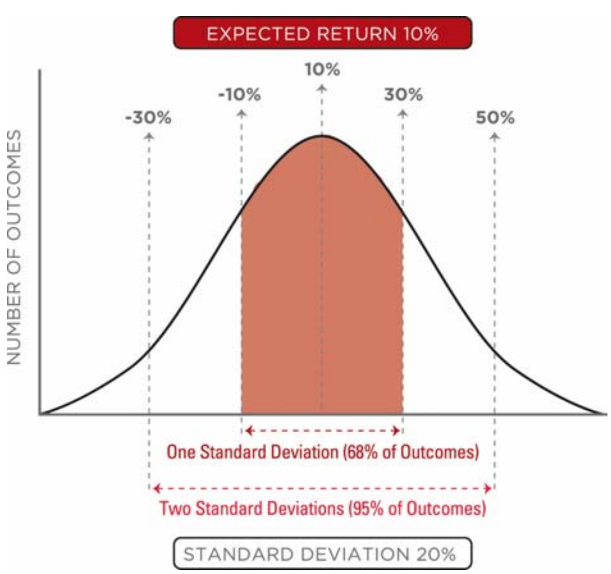

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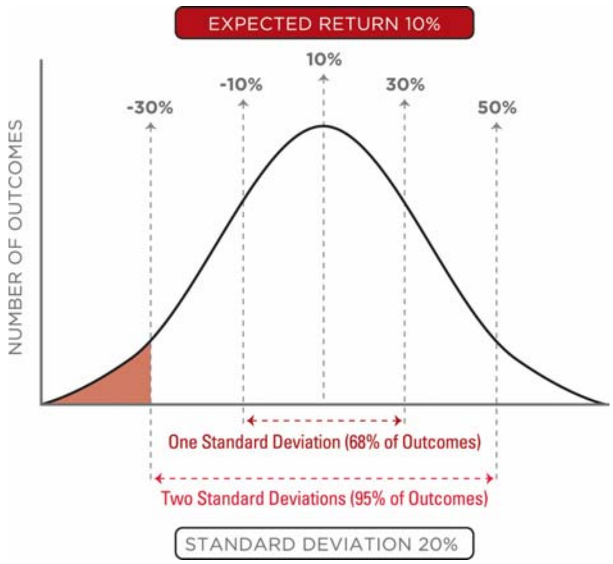
"Large Loss" Scenario



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The Hierarchy of Decisions

Most Important

- Time Horizon – Investment Strategy
- Appropriate level of risk/return
- Asset Classes Considered
- Mix among Asset Classes
- Sub – Asset Classes
- Managers/Funds

Least Important

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Establishing the "Appropriate Risk/Return Level" - Optimization

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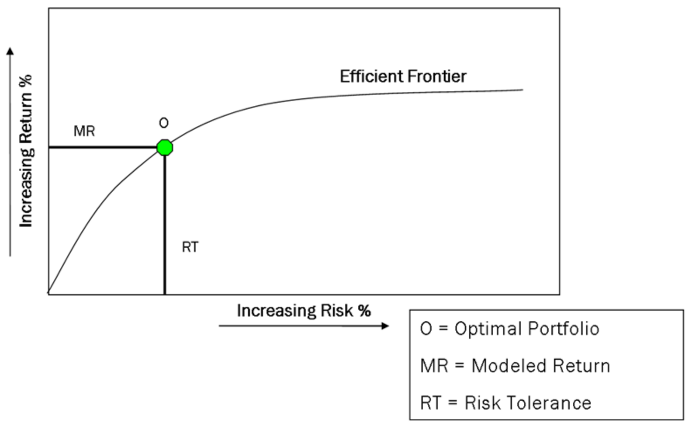

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Voila! Our Optimal Portfolio

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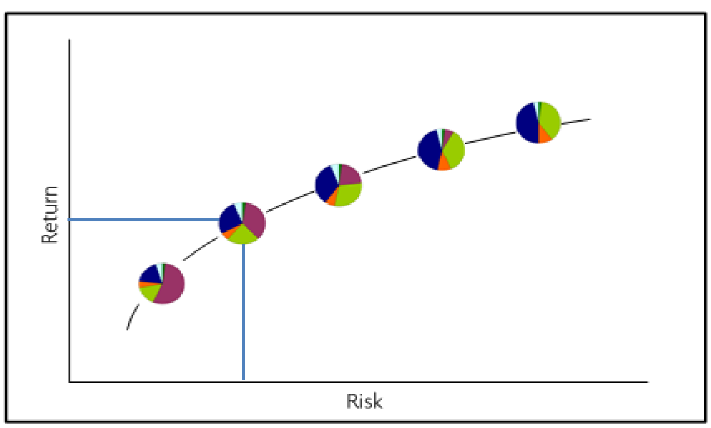

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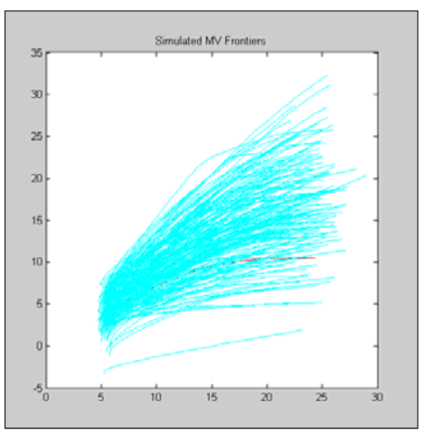
What Could Possibly Go Wrong?

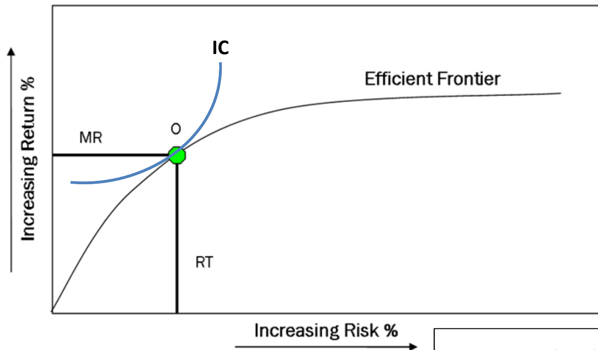
- Our theory of how markets work is not precise
  - Incomplete knowledge (theories are not laws)
  - Unstable assumptions (variables are not constants)
  - Technical limitations (theoretically superior is not practically applicable)
- Our assessment of risk tolerance is also imprecise
  - Incomplete knowledge
  - Unstable assumptions
  - Technical limitations
- Our theories and assessments are representations of reality; they are inaccurate but improving

Resampled Efficiency™ Optimization



Source: New Frontier Advisors

Portfolio Optimization: Matching Risk Tolerance to Return Expectations



RT = Risk Tolerance
MR = Modeled Return
IC = Indifference Curve
O = Optimal Portfolio

You Can't Always Believe What You Think

- Assumptions must be examined
- Theories must be refined
- Technological advances help test assumptions, refine theories, and change what is "generally accepted"

Behavioral Finance & Reaching Employees

Understanding Risk From a Fiduciary and Behavioral Standpoint
Webinar

August 12, 2015

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CEO
Boston Research Technologies

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Behavioral Finance & Reaching Employees

Agenda

A Quick Lesson In Behavioral Finance

The Problem With Risk Questionnaires

The Solution: Consequence-Based™ Risk Questionnaire

1. EAC
2. Vignette-Based
3. Prescriptive Scoring
4. Nomenclature

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A Quick Lesson in Behavioral Finance

Let's consider a basic question:

What is the difference between **classical economics**, **standard finance,** and **behavioral economics or behavioral finance**?

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A Quick Lesson in Behavioral Finance

Answer:

The assumption of *rationality*.

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Modern Portfolio Theory vs. Behavioral Finance

Assumptions:

- All investors aim to make as much money as possible, regardless of any other consideration.
- All investors are rational and risk adverse.
- All investors have access to the same information at the same time.
- Investors have an accurate conception of possible returns.
- All investors are price takers, i.e., their actions do not influence prices.
- Risk/Volatility of an asset is known in advance and is constant.

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Behavioral Economics vs. Classic Economics

- Are we studying rational employees?

  Rationality is the foundation of standard economic theories, predictions, and recommendations. We are capable of making the right decisions for ourselves.

  - Dr. Dan Ariely

- Behavioral finance allows for the possibility that we may consistently behave irrationally.

- Who decides what is rational? What is rationality?

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A Definition of Rationality - Kahneman

- The only test of rationality is not whether a person's beliefs and preferences are reasonable, but whether they are internally consistent.
- A rational person can believe in ghosts so long as all his/her other beliefs are consistent with the existence of ghosts.
- A rational person can prefer being hated over being loved, as long as his/her preferences are consistent.
- Rationality is logical coherence - reasonable or not.
- Economics are rational by this definition, but there is overwhelming evidence that Humans may not be.

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Standard Finance vs. Behavioral Finance

- People in standard finance are rational. They are not confused by frames, they are not affected by cognitive errors, they do not know the pain of regret, and they have no lapses of self control.

  - Meir Statman

- People in behavioral finance may not always be rational but they are always normal. Normal people are are often confused by frames, affected by cognitive errors and know the pain of regret, and the difficulty of self control.

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Question

Can something as “soft” as behavioral finance really modify behavior?

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Two Examples

- The Power of Framing
- Risk: Calculative vs. Intuitive

Source: Benartzi and Thaler (2006)

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The Power of Framing

- The numbers of lines on the investment election form affects the number of funds selected.

Source: Benartzi and Thaler (2006)

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Experimental Data: Number of Lines Hypothesis

- *Morningstar.com* subscribers were presented with eight investment funds and were asked to construct a portfolio.
- One group was presented with an investment election form with eight lines.
- Another group was presented with an investment election form with four lines, though selecting more than four funds was just a click away…

Source: Benartzi and Thaler (2006)

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Experimental data (cont.)

"… please indicate how you would allocate your retirement contributions. If you would like to elect more than four funds, please click here."

Source: Benartzi and Thaler (2006)

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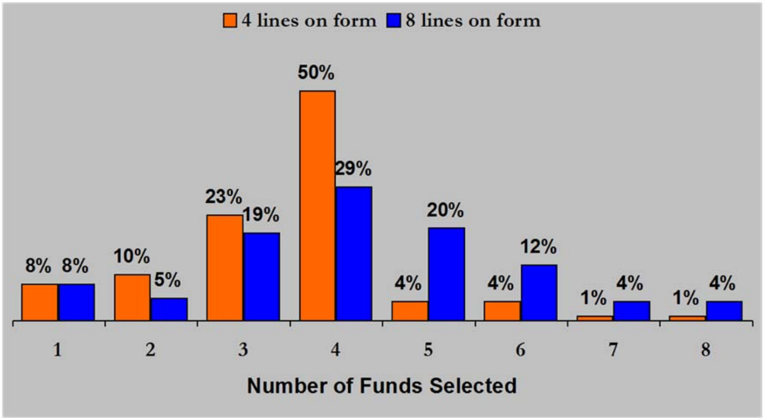
Results



Source: Benartzi and Thaler (2006)

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Calculative vs. Intuitive

- Two different ways of eliciting a person's preferences for risk.
- Which (if either) is the truth?

Sources: Benartzi and Iyengar, in progress

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Driving in Bolivia

The Stremnaya Road is extremely beautiful with gorgeous mountains, cliffs and greenery. While the road offers dramatic scenery, it is considered by some the most dangerous road in the world. The combination of extremely narrow roads and tall cliffs could easily result in a deadly accident, and an average of two vehicles per month fall from the road. The danger of the road ironically though has made it a popular tourist destination starting in the 1990s. Mountain biker enthusiasts, in particular, have made it a favorite destination for downhill biking.

QUESTION 1: Would you be interested in taking an all expenses paid trip to the Stremnaya Road?

__ Yes
__ No
__ I am not sure

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The Stremnaya Road

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The Stremnaya Road

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The Stremnaya Road

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The Consequence-Based™ Risk Questionnaire

The Problem With Risk Questionnaires

- Participants are not clear on the definition of risk
- There are several types of risk
- The consequences of risk are not specifically described
- Risk is treated as an abstraction
- Risk is not personalized
- Gains and losses are treated equally

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The Consequence-Based[TM] Risk Questionnaire

1. EAC

Choice Architecture describes the way decisions can be influenced merely by how the choices are presented.

EAC is based on a voluntary model but is predicated on a greater level of awareness of the consequences of choice. By highlighting losses of the non-preferred alternative, and gains of the preferred alternative; Enhanced Active Choice impacts savings.

The individual is asked to make a choice in the context of the potential impact of their choice. The result of this enhanced and contextualized information is that the individual is more likely to take action in a way that positively impacts future outcomes/maximizes gains.

[1] *Source: Professor Punam Keller of Dartmouth University*

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The Consequence-Based[TM] Risk Questionnaire

EAC (example)

NARPP's joint research initiative is informed Professor Keller's research in Enhanced Active Choice (EAC) on savings behavior.

Professor Keller's research focused on new employees at Dartmouth University whose rates of participation in a voluntary supplemental retirement plan were historically only 7%. Through simple and timely communications, she alerted individuals to the choice of retirement plan participation (along with the long-term consequences incumbent with that choice).

Through Professor Keller's use of EAC, the team was able to increase participation rates to over 31%.

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The Consequence-Based™ Risk Questionnaire

Principles of Motivate, Action, Plan ("MAP")

EAC leverages the underlying principles of MAP. This systematic approach to presenting information has proven to be effective in improving choice outcomes.

Step 1- Motivate	Step 2- Force an Action	Step 3- Plan
• Person must be able to visualize the realization of a goal or a dream - something aspirational • What is the result of the savings, something tangible in return.	• Highlight the advantages of the preferred action and highlight the losses of the "wrong" decision • Require an action to help enforce the follow through on the decision (ie checking a box)	• Lay out what is involved • Break down the tasks into manageable sections • Total time should be be under 10 minutes.

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The Consequence-Based™ Risk Questionnaire

2. Vignette-Based

Consequence-based questions use scenarios/vignettes that are personal and
easily understandable by the respondent rather than presented in a more abstract manner.

Consequence-based questions are often binary in nature, presented in an "if" and "then" type scenario, where the respondent's consequences are easily identifiable.

Example:
As you save for retirement, you amass an account value in your 401(k) Plan of $10,000. Overnight the markets struggle and your account value declines 20%, or from $10,000 to $8,000. You feel that this loss is acceptable for now because you are a long-term investor and you are prepared for sharp changes in your account value. You assume the market will go back up and restore your account balance to $10,000

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The Consequence-Based^{TM} Risk Questionnaire

3. Prescriptive Scoring

With respect to saving for retirement, one of the primary risks facing respondents is not having enough money to maintain a desired lifestyle. Therefore the inherent risks to participants are not taking enough risk (for example, with younger workers) and likewise (for older workers), potentially taking too much risk with their retirement savings.

Example: Loss aversion, over weight risky approach

(Score 50-41)
Aggressive Investor
As an aggressive investor you expect ups and downs in the market. You expect your account balance to shift from day to day and month to month. Your desire for greater returns outweighs your concerns with short-term account balance fluctuations. You realize that some investments may cause your account value to significantly decline. You may also have a longer time period until when you need your money. Additionally, you may not totally rely on your 401(k) Plan for all of your retirement savings.

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The Consequence-Based^{TM} Risk Questionnaire

4. Nomenclature

Consequence-based questions take into account the impact nomenclature may have on a participant's understanding of risk. Advertising, branding, and heuristics may all impact a participant's decision making and may thus prejudice responses. All else being equal, we structure scenarios in a way in which heuristics have a limited impact on each response.

Example:

Inflation is the sustained increase in the price of everyday goods and services. As a retiree, inflation can eat away at your retirement savings. You feel it is appropriate to allow your investments to sharply fluctuate (and potentially lose value) to have a larger account value (which may help you combat inflation in retirement).

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Fiduciary Certification Workshops

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- For firms that intend to achieve CEFEX fiduciary certification
- No charge to attend workshop
- Significantly reduces cost of CEFEX assessment
- Workshop dates in 2015:
  - October 15, 16 Pittsburgh, PA
- In collaboration with Dimensional Fund Advisors
- E-mail Carlos Panksep cpanksep@cefex.org for information

Q&A and Housekeeping

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