Financial Decision Making
Theory, Analysis & Tools
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Course Outline

Why do good decisions matter?
How do we know if the decision is a good one?

Theory

WHAT WOULD YOU LIKE TO KNOW? To make the best decisions, ideally we'd like to know…everything.
WHAT DO YOU KNOW? What's the breakdown between what we know and what we don't? Of the things we don't know, can we find out, or are they unknowable? 3 choices: known, knowable or unknowable.
WHAT TYPE OF SYSTEM ARE WE DEALING WITH? Deterministic systems are those which allow a person to accurately anticipate what's going to happen if they know the initial conditions and the rules governing how the system operates (e.g. if I drop a coin and nothing else interferes with it, it will fall to the ground). Random systems are those where possible outcomes can be understood in terms of probability distributions over a large number of occurrences, but individual results are unknowable (e.g. when we drop the coin we know there's a 50/50 chance of it landing heads or tails, but there's no way to know ahead of time which).
ATTENDANT HEADACHES. What about chaotic systems? And when we dropped the coin, couldn't we have calculated angle/height/spin rate etc. to predict how many times it would flip over?
THE MASTER FORMULA: EXPECTATION VALUE. How 16th century math drives the world. The answers are all in the numbers. Except for one small problem: "risk looms larger" (i.e. we're all a bunch of chickens)

KNOWN, KNOWABLE, or UNKNOWABLE?
DETERMINISTIC or RANDOM?
EXPECTATION VALUE

Analysis

IS IT BETTER IF THE MATH IS HARDER? Or are we just wasting our time trying to figure out the unknowable?

PROBABILITY AND STATISTICS. Probability talks about the odds of things that haven't happened yet. Statistics are the record of things that have already occurred. When the two match up, actual results bear out the predictions that were made beforehand.
THE VALUE OF STATISTICS. If you have results you have a means for testing your probability calculations – the ones you made before the event. You can't use statistics to reverse engineer probability though, except in certain cases. But don't tell the guys who try (a subtle skewering of selected Nobel Laureates).
THE LUDIC FALLACY. In a game we know all of the possible outcomes. In life, not so much. Yet we approach things as if we can account for all the variables, even when we know we can't (goofy, huh?)
SHOULD WE BE CERTAIN? 2 halves of the 20th century: We know; we don't know
IF WE DON'T KNOW, SHOULD WE JUST GUESS? Some bits of knowledge are relatively easy to come by. Others begin to get rather expensive to discern. And some we can never get to. At what point do we stop collecting data and just take our chances?
ANALYSIS PARALYSIS & OLD HICKORY. A message from our 7th president: "Take time to deliberate, but when the time for action arrives, stop thinking and go in." Where does the due diligence end, and the gambling begin?
RELATIVE COMPARISONS. If zergs are better than nergs, are gergs better than marigolds? Dancing around the edges when the stuff in the middle is too thick.
WHAT CAN GO WRONG? When we get to the limit of what we can know, it's useful to know how badly we can get hurt if things don't go our way.
WHAT ABOUT THE OTHER GUY? In deciding between x and y, do we also have to consider what the other guy might do? Game Theory, and the specialized single-player version (Decision Theory).
DON'T DELAY, CALL TODAY. Immediate action required. Those annoying situation where we don't have time to use any of the things we've just discussed. Insight from the always-interesting Mr. Gladwell.
WOULDN'T IT BE NICE. The thorny problem of the right choice being wholly impractical. A new investment portfolio every morning?

Tools

DECISION TREES. Great for organizing information. Format also highlights the relationship between data elements. For trees which contain multiple minor decision points, the format also highlights which possibilities go away as sub-decisions lead to narrowing of options as the final decision becomes nearer.
THE RELATIVE VALUES MATRIX. For comparing multiple options, which are being judged based on several variables each. Provide the means to rank each option on a by-variable basis and gain insight as to which combination of factors is optimal. Can be made more complex by adding weighting to the most important factors, or implementing iterative processing to eliminate least desirable candidates prior to making the final decision (or both).

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