Lecture 20

Expactancy

Let's play a game:

You have 2 envelopes from which to choose:

Scenario 1:
Envelope 1 has a 100% chance of having 1$
Envelope 2 has a 10% chance of having 10$
Which would you choose?

Scenario 1:
Envelope 1 has a 100% chance of having __$
Envelope 2 has a 10% chance of having __$
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Expected Value (EV)

The expected value of a discrete random variable is the probability-weighted average of all possible values.

$$\mathrm{E}[X] = \sum_{i=1}^{\infty} x_i \, p_i \,,$$

Where, X is the value
P is the probability

Expected value: The expected value is an anticipated value for a given investment. In statistics and probability analysis, the expected value is calculated by multiplying each of the possible outcomes by the likelihood that each outcome will occur, and summing all of those values. By calculating expected values, investors can choose the scenario that is most likely to give them their desired outcome.

Trading example:

Stock ABC trades at 20$, you perceive that it has a 60% chance of going to 23$ or a 40% chance of going to 13$.

Stock XYZ trades at 10$, you perceive that it has a 40% chance of going to 16$ or a 60% chance of going to 8$.

Which stock should you buy?