RightRisk Payoff Matrix Exercise

Winter	Probability	Actions		
		Buy Hay	None	Sell Hay
Severe	1/6	$36,159	$34,365	$31,524
Normal	4/6	$50,997	$51,497	$51,997
Mild	1/6	$52,997	$53,997	$54,997

Which strategy would you choose, buy hay, no action, or sell hay?

Explain Why.

Basic Risk Management Decision Rules

Maximax

Maximax is for risk lovers; those people that like the thrill of getting a high payoff with great risk. Under this criterion, a person looks through each action and chooses the one with the highest possible payoff. That is, they are choosing the best of the best.

Maximin

A more conservative approach might be to look at a worse-case scenario. A risk averse person might want to choose the best of the worst returns. This is called the "maximin" strategy because we would be maximizing the minimum possible outcome. That is, we are choosing the best of the worst thing that could happen.

Most Likely

Sometimes you might have some information about what is most likely to happen; then you would ignore normal probabilities. For example, long-range weather forecasts could help pin down what is most likely to happen. You might know that a wet year is more likely in an El Nino year.

Maximize Expected Value

None of the strategies so far has taken into account the probabilities associated with the scenario outcomes. The expected value is the weighted sum of the outcomes using the probabilities of occurrence as the weights. The expected value is what you would average over a long period of time. A risk-neutral person would base their choice on the expected value of the outcomes. This person would not be concerned with the variability in the outcomes but rather the expected return over the long haul.

Variability

Variability in the outcomes can be measured using the standard deviation. The standard deviation of a set of outcomes is the square root of the variance. A person will realize an outcome within one standard deviation, plus or minus, from the mean two-thirds of the time. They will realize a return within two standard deviations about 90 percent of the time.