Quantitative Risk Analysis: Expected Monetary Value

What do you mean I need a project contingency?

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Expected Monetary Value (Tool)

Expected Monetary Value

Expected value = risk probability (%) * risk consequences ($)

- Risk consequence weighted based upon the risk probability
- Important to Risk Management since it attempts to place a $ figure on each risk.

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Expected Monetary Value (cont.)

Expected Monetary Value

- Impacts are expressed in $
- Probabilities must be expressed in a % or decimal value.

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Expected Monetary Value (cont.)

Expected Monetary Value

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Expected Value of a Project

Expected Monetary Value

Risk	Probability	Impact	EV
Risk #1	0.5	$1M	$500,000
Risk #2	0.2	$2M	$400,000
Risk #3	0.2	$100,000	$20,000
Risk #4	0.8	-$300,000	-$240,000

Expected Value for the Project = $680,000

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Project Contingency

Definitions

Expected Monetary Value

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Expected Monetary Value

Project Contingency
Definitions

- Contingency Reserve
  - Specific provision to cover variations that may occur in the expected values of cost and schedule but not scope and quality.
- Management Reserve
  - A provision held by the project sponsor for possible changes to scope and quality

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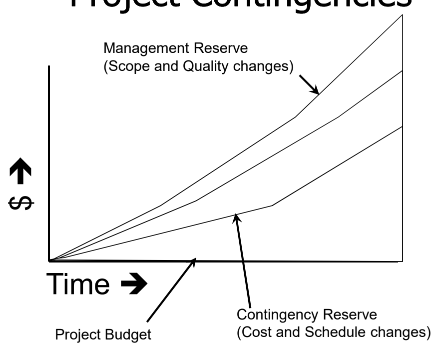
Expected Monetary Value

Project Contingencies



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Expected Monetary Value

Project Reserves
When is it Defined

- After estimate preparation
- Based on sum of expected values or a % of the prospect budget
  - Probability of a risk event x amount to manage the risk = expected value
- Based on Project Risk Management Plan

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Expected Monetary Value

Summary

- The Expected Monetary Value of a risk is:

  probability x cost of the impact = EMV

  ∑ EMVs = Contingency

- If the Contingency seems too high, do additional project planning to remove, reduce, or transfer project risks.

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Expected Monetary Value

Quantifying Risks

- Using the four identified risks, calculate the expected monetary value for each risk and assuming that there are only 4 risks, what is the contingency?

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