



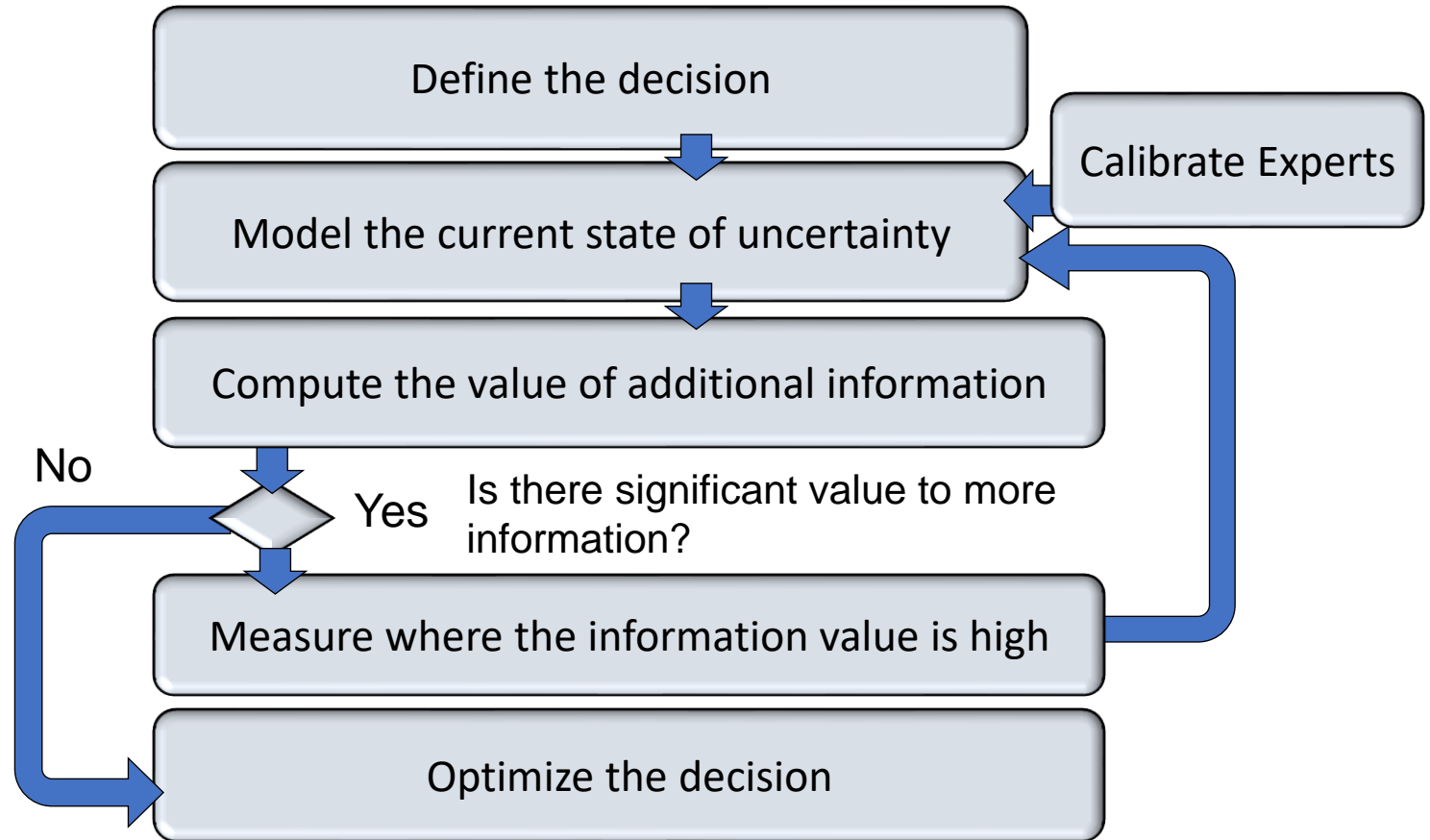
Decisions Under Uncertainty

Module 4: Risk Tolerance

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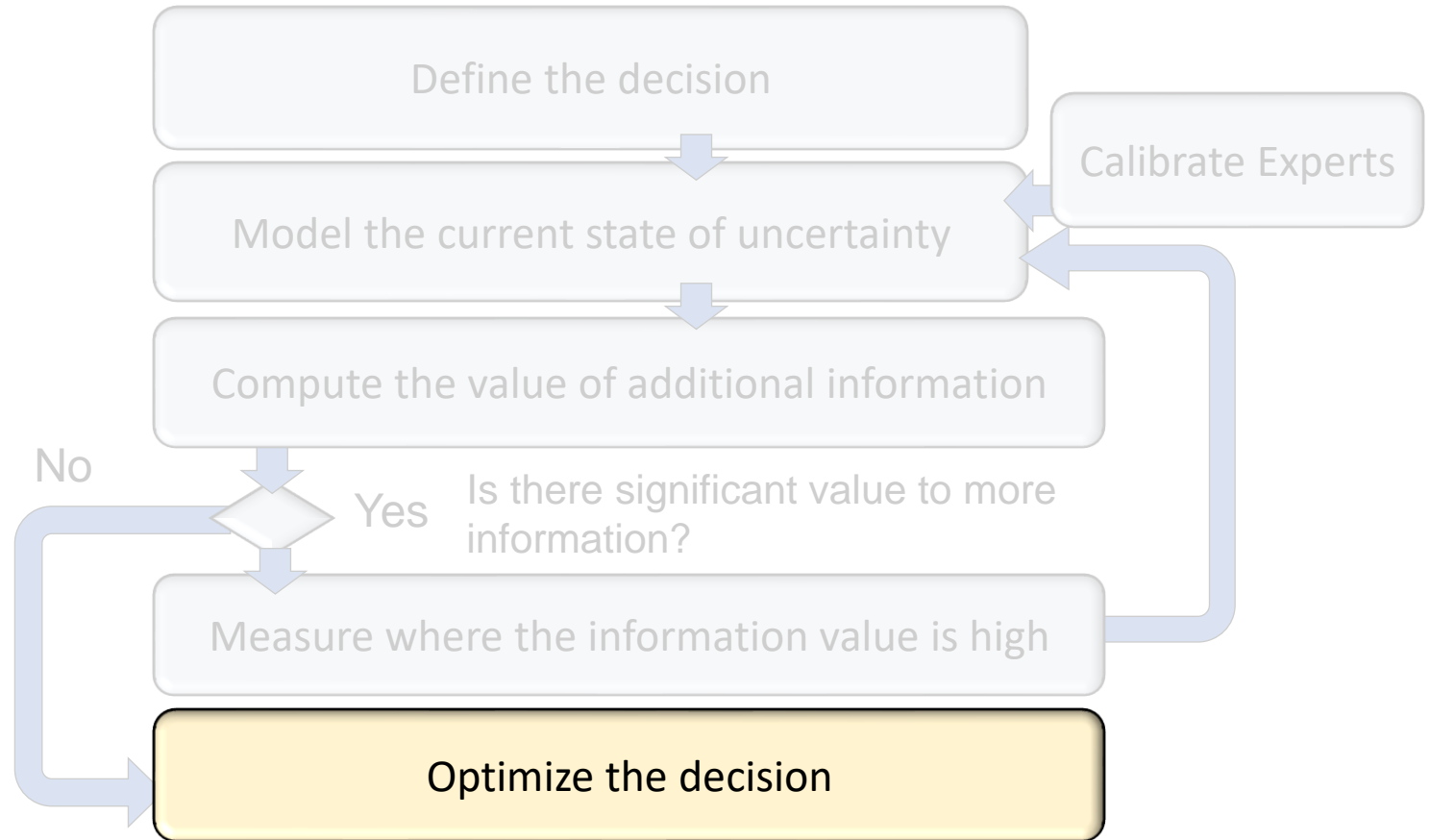


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Quantifying Risk Preferences

Will you approve this project with a 60% chance of netting \$50 million? It costs \$30 million has a 40% chance of being a total loss.

There is a 5% per year chance of a catastrophic \$200 million loss acceptable?

I don't know. It depends on how risk averse I'm feeling.





The Psychology of Risk Aversion

Decision makers are inconsistent regarding their own aversion to risk.



Neuron Vol. 47, (2005): 763–770

The Neural Basis of Financial Risk Taking
Camelia M. Kuhnen and Brian Knutson

Journal of Personality and Social Psychology
2001, Vol. 81, No. 1, 146–159

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0022-3514/01/\$5.00 DOI: 10.1037/0022-3514.81.1.146

Fear, Anger, and Risk

Jennifer S. Lerner
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er & D. Keltner, 2000), the authors predicted perception. Whereas fearful people expressed people expressed optimistic risk estimates and for naturally occurring and experimentally people more closely resembled those of happy since aversive tendencies accounted for these

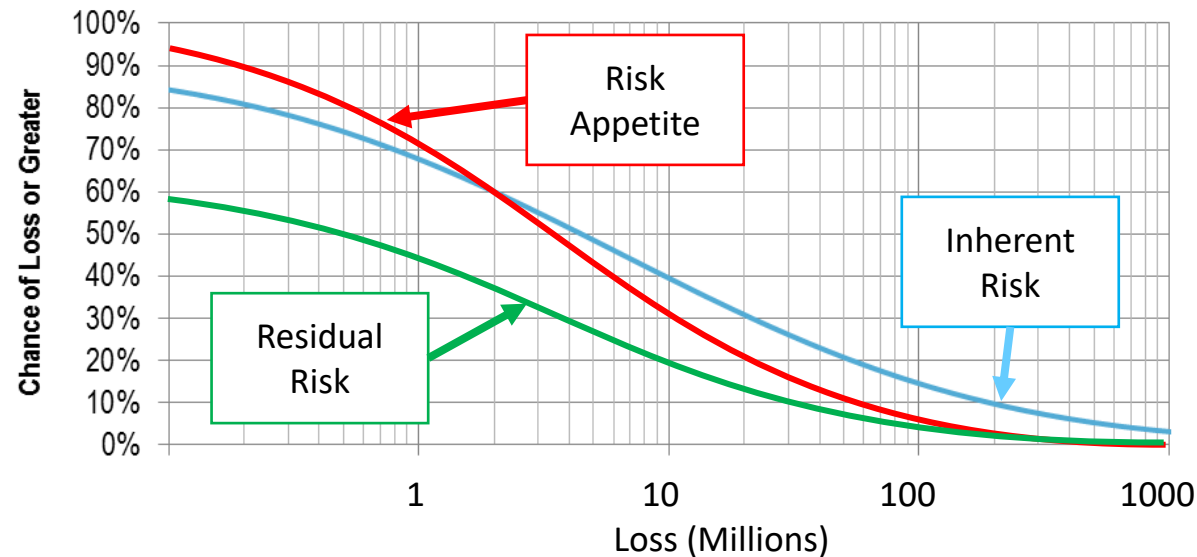
Factor	Risk Aversion
Being around smiling people	↓
Recalling an event causing fear	↑
Recalling an event causing anger	↓
A recent win in an unrelated decision	↓
A recent loss in an unrelated decision	↑



A Version of Absolute Tolerable Risks

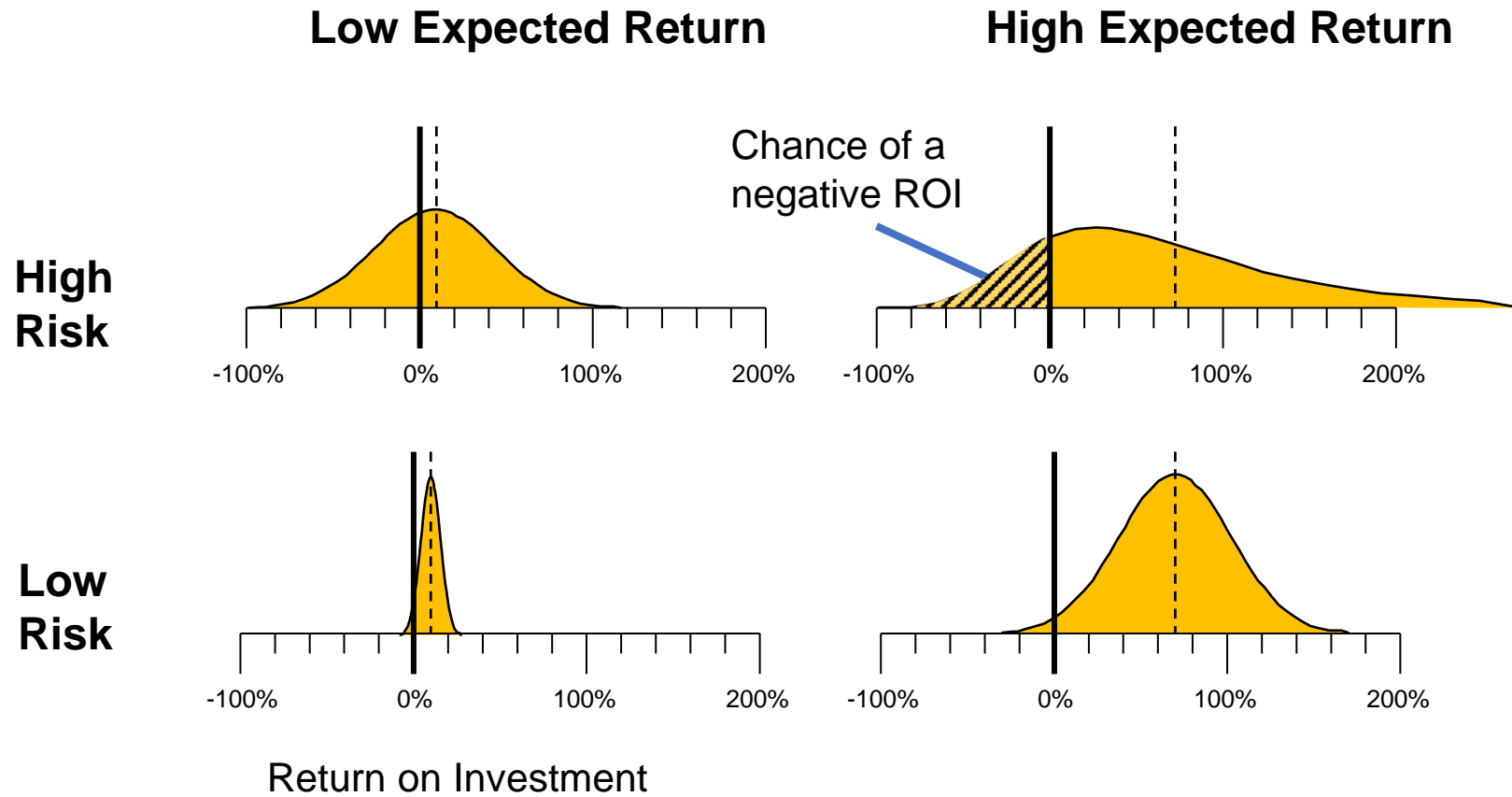
An Unambiguous Risk Appetite Using Loss Exceedance Curves.

The Loss Exceedance Curve (LEC) is a simple visual for defining a maximum tolerable risk. But it doesn't directly address risk return tradeoffs. It also requires that standards are defined for when a cost becomes a risk.





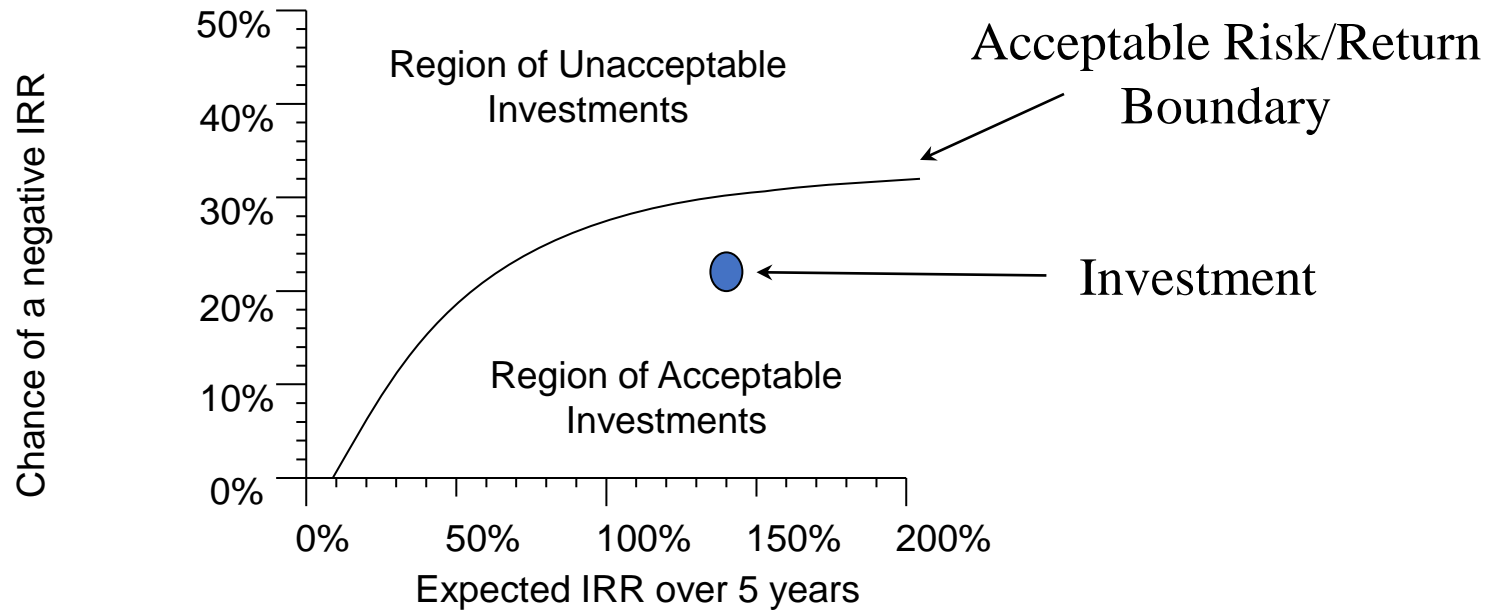
The Risk vs. Return Decision





Simplified Risk/Return Tradeoffs

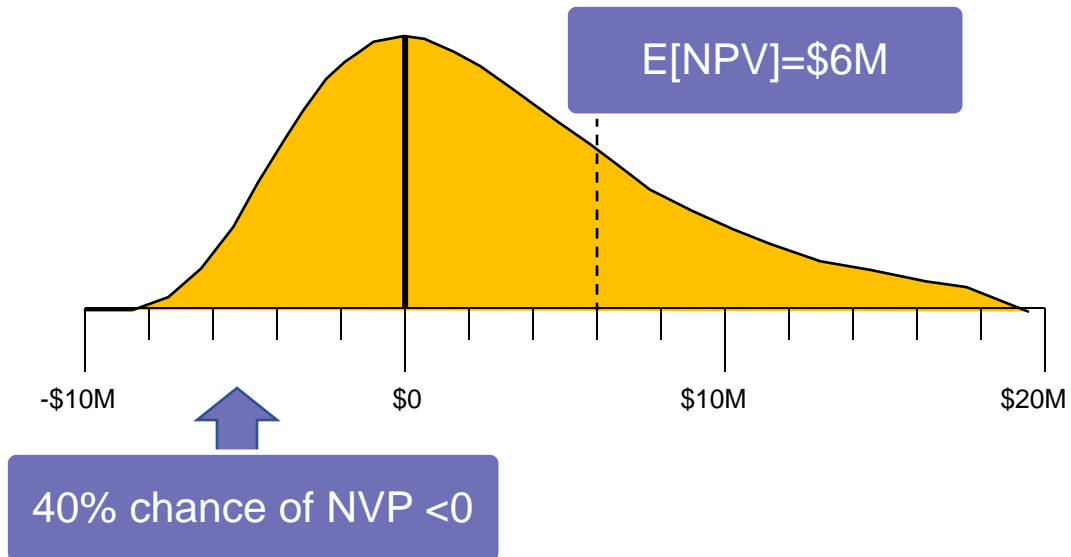
You could simply draw a curve that represents how much chance of a negative return is acceptable for a given expected return. This ignores some issues – like how much the negative return could be.



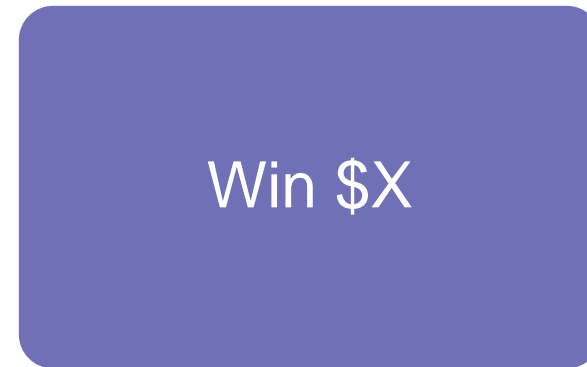


Certain Monetary Equivalent

High Risk High Expected Return



Certain Monetary Equivalent (CME)



Question: What “\$X” makes you indifferent between the two choices?