

DETERMINING THE VALUE OF AN ASSET FOR PORTFOLIO SELECTION

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Decision Analysis & Portfolio Management

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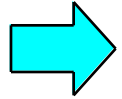
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LAS VEGAS, NV.



AGENDA

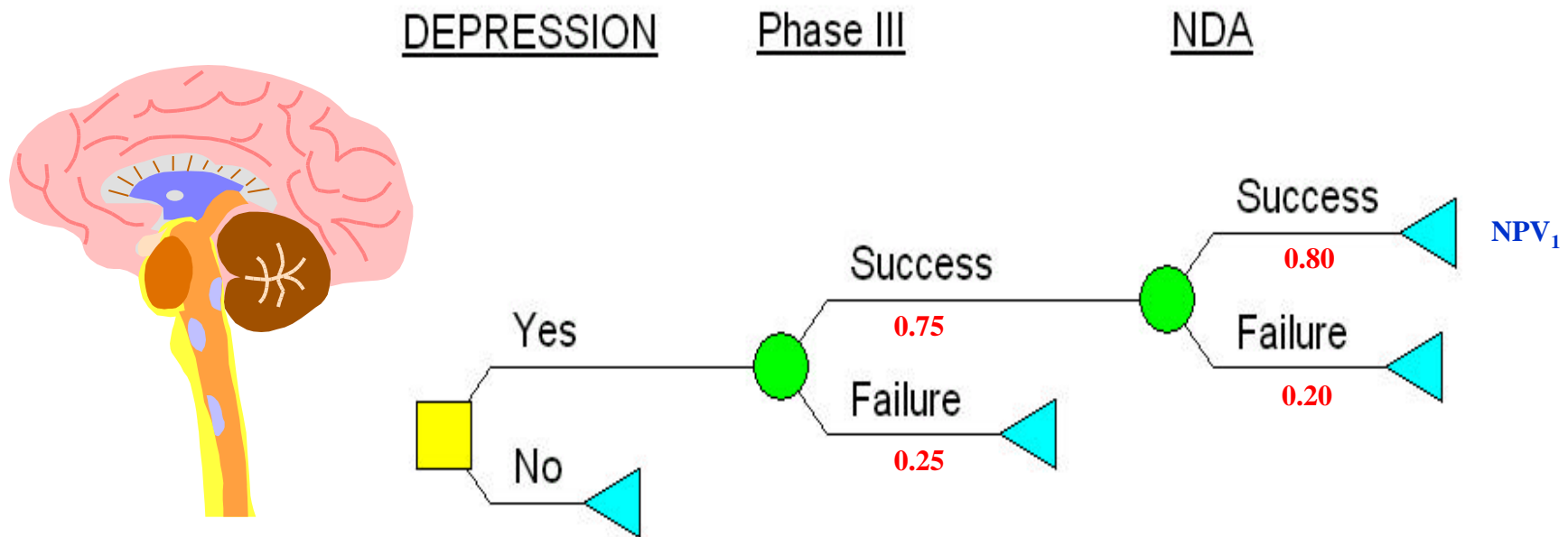


- ◆ One asset, one apparent target, one disease
- ◆ One asset, three strategies, three apparent targets, one disease
- ◆ One asset, three strategies, three assumed targets, three diseases, no technical dependence
- ◆ One asset, three strategies, three assumed targets, three diseases, technical dependence
- ◆ The nuances of commercial dependence
- ◆ The realities of technical and commercial dependencies
- ◆ Two assets, one or more diseases
- ◆ Conclusions

Simple asset valuation assumes hitting the desired target

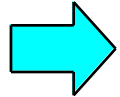


A rollback of the tree allows you to easily determine the value of the asset



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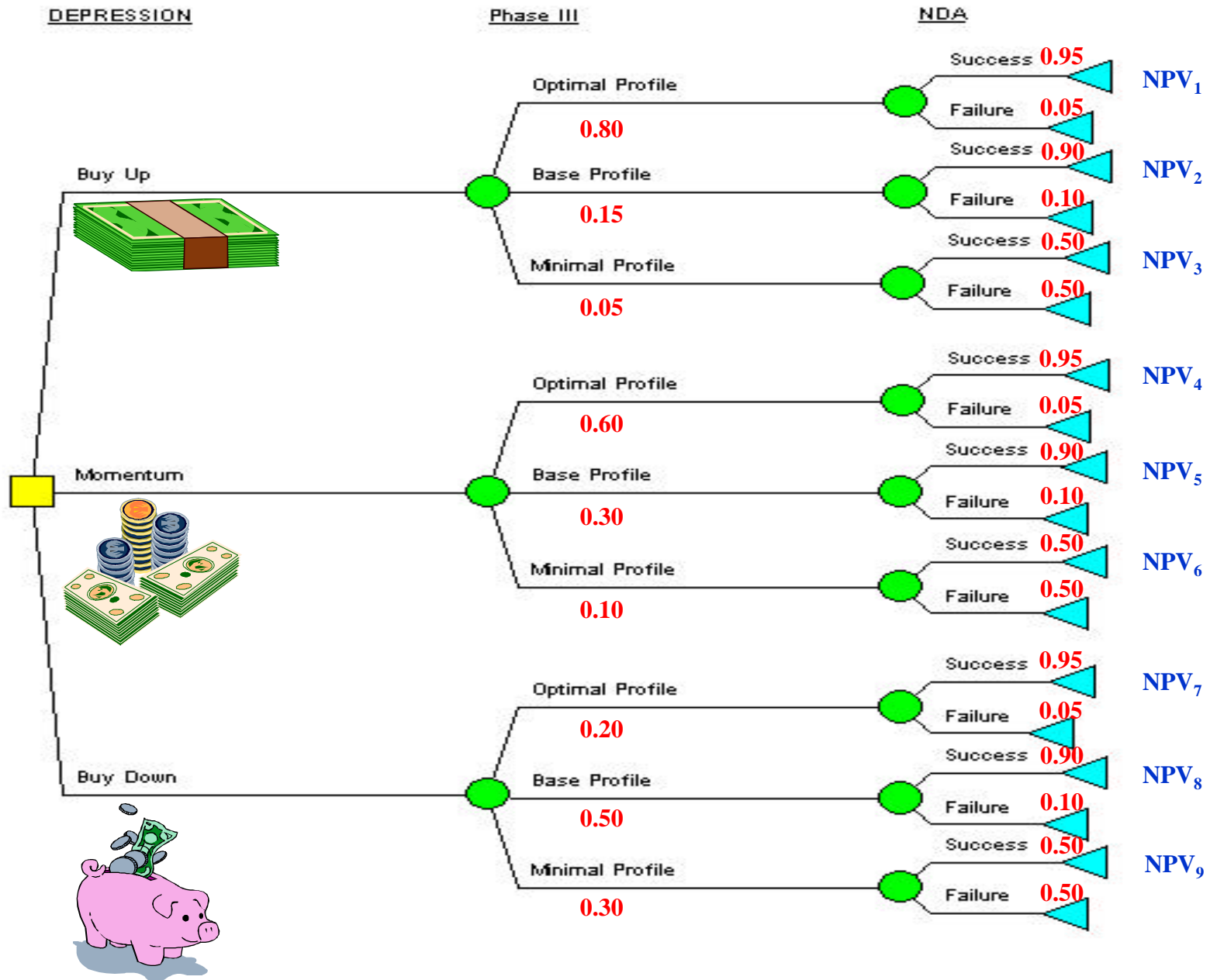
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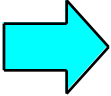
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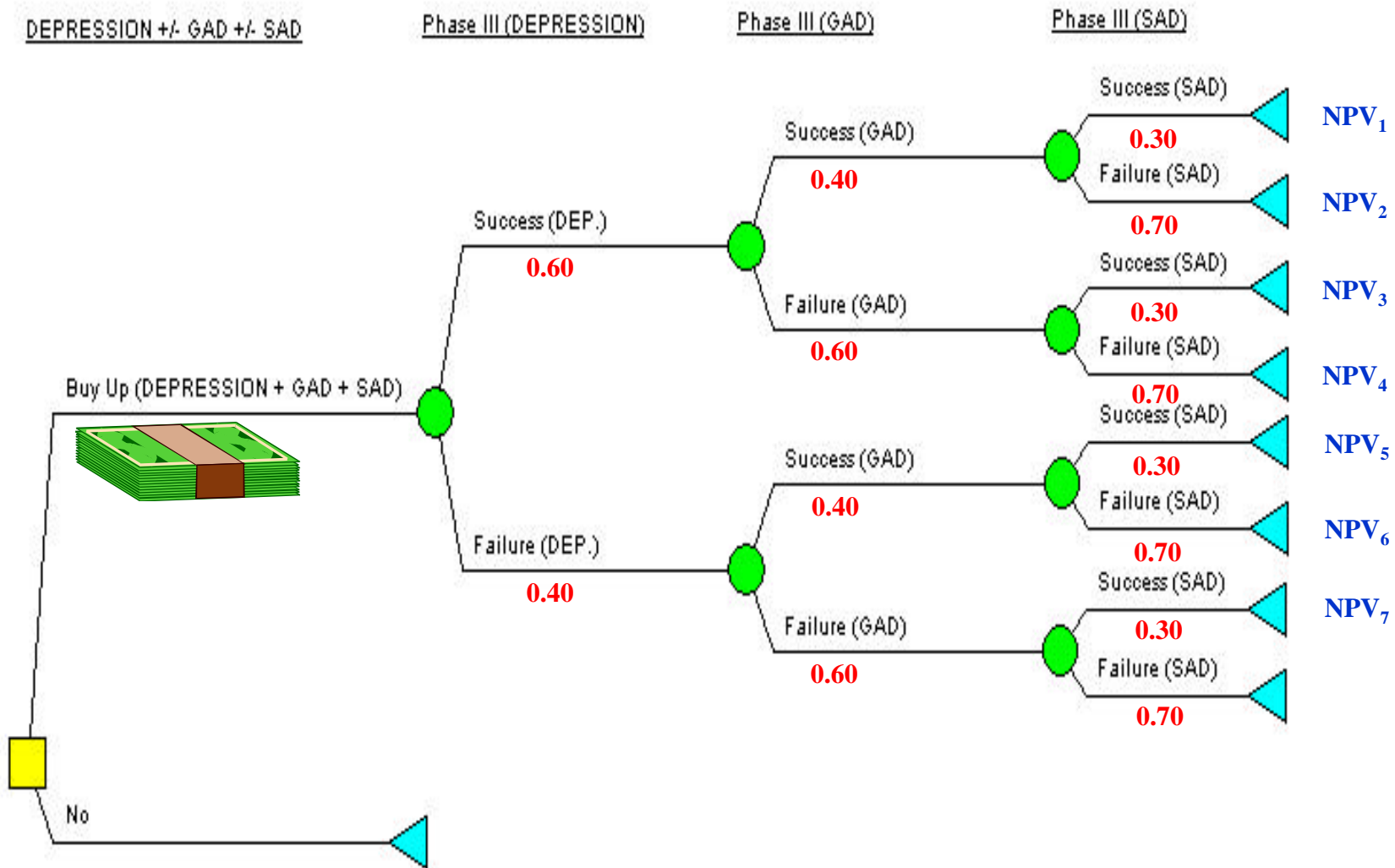
What is the expected value of this asset?



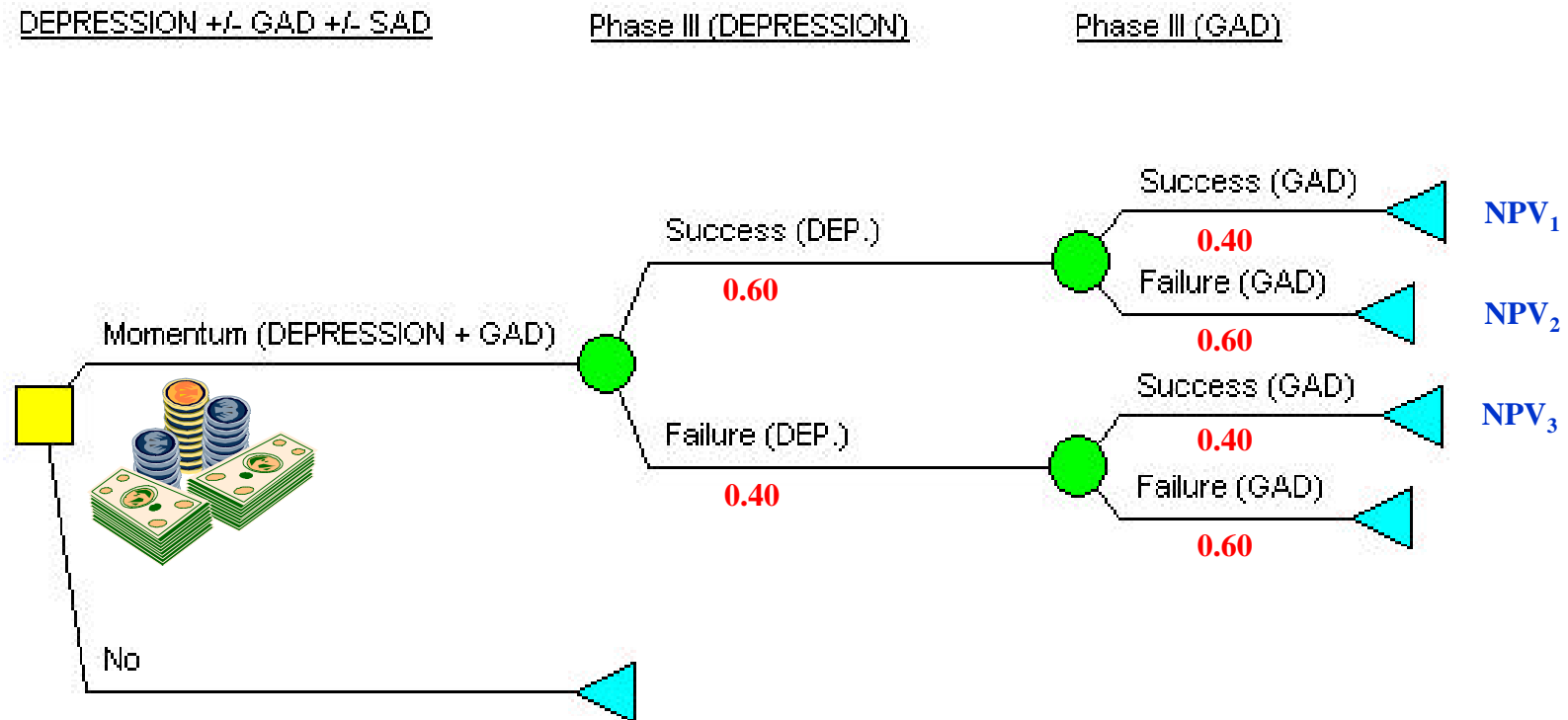
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A Buy Up strategy invariably targets multiple markets and/or superior labeling



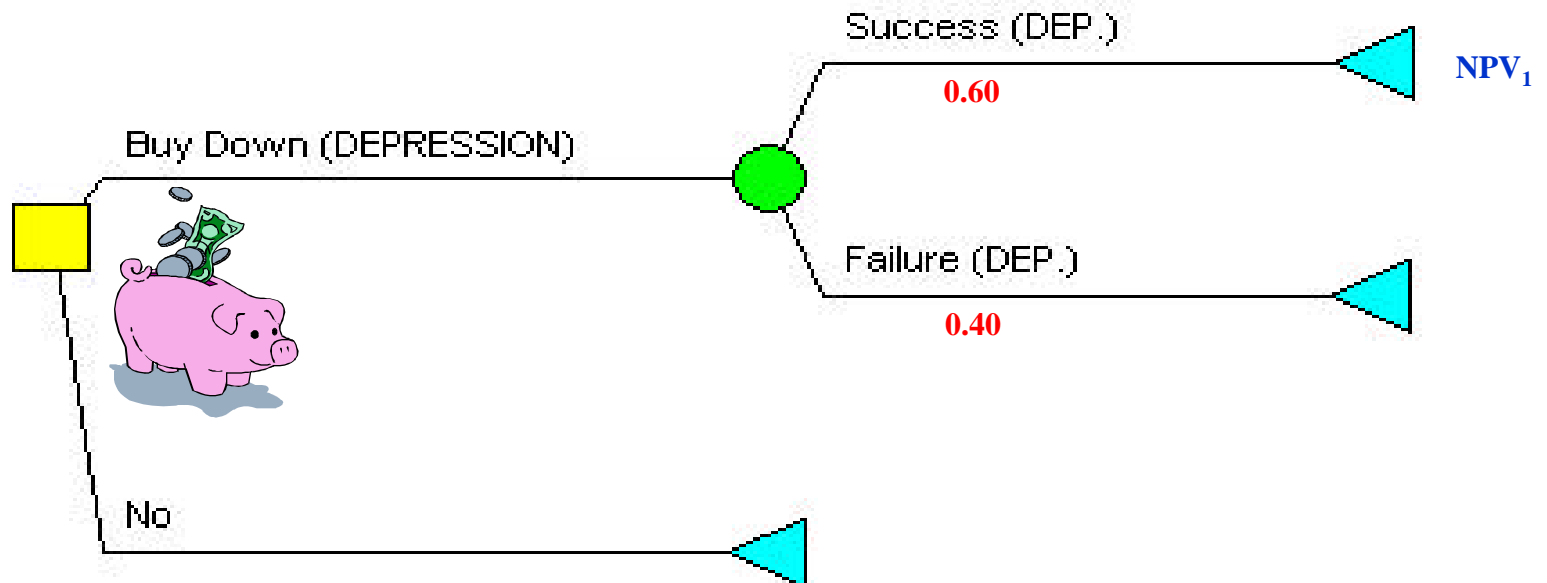
A Momentum strategy normally follows a prudent investment path



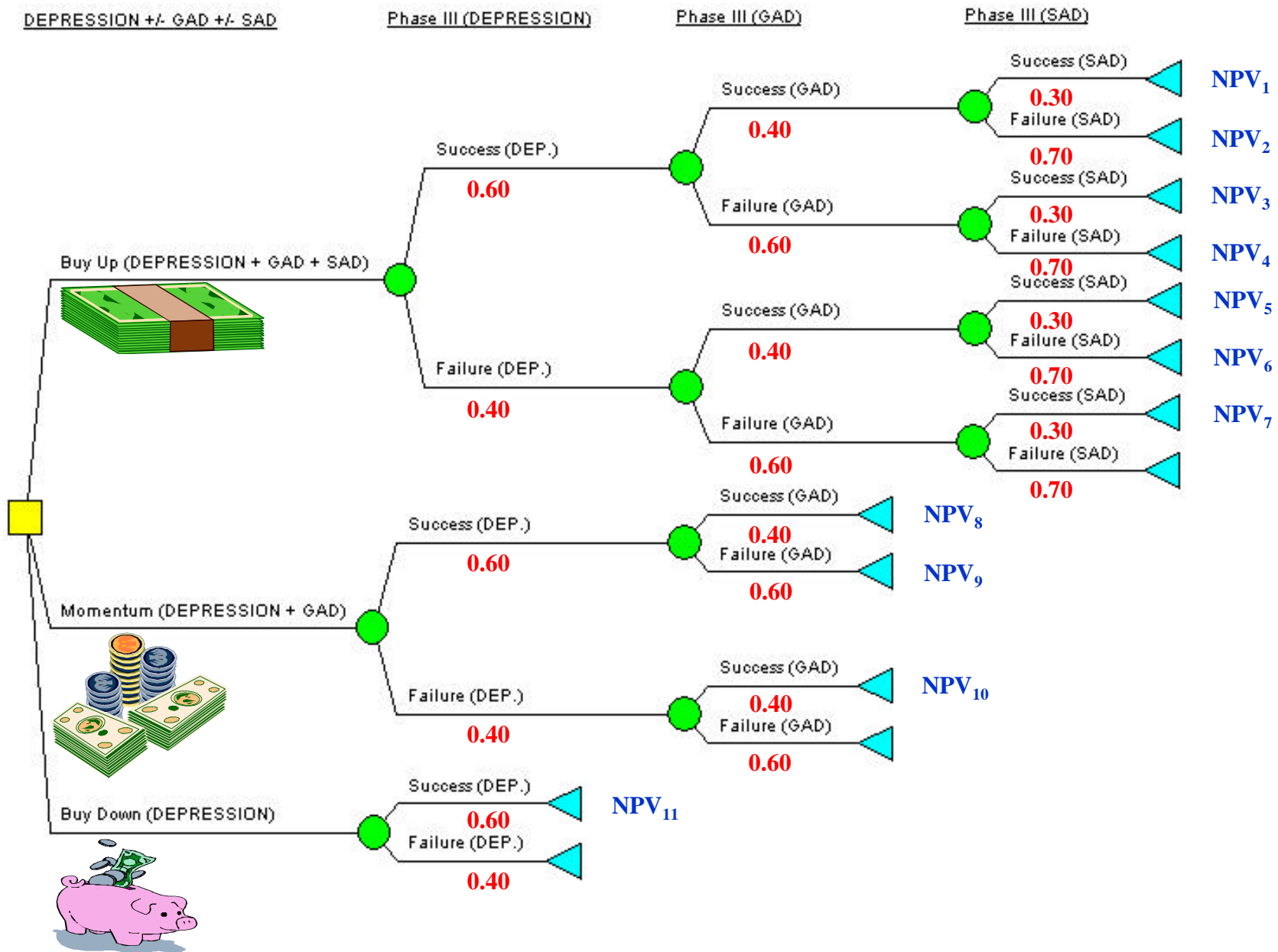
A Buy Down strategy is often geared to achieving a market presence at the lowest cost

DEPRESSION +/- GAD +/- SAD

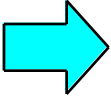
Phase III (DEPRESSION)



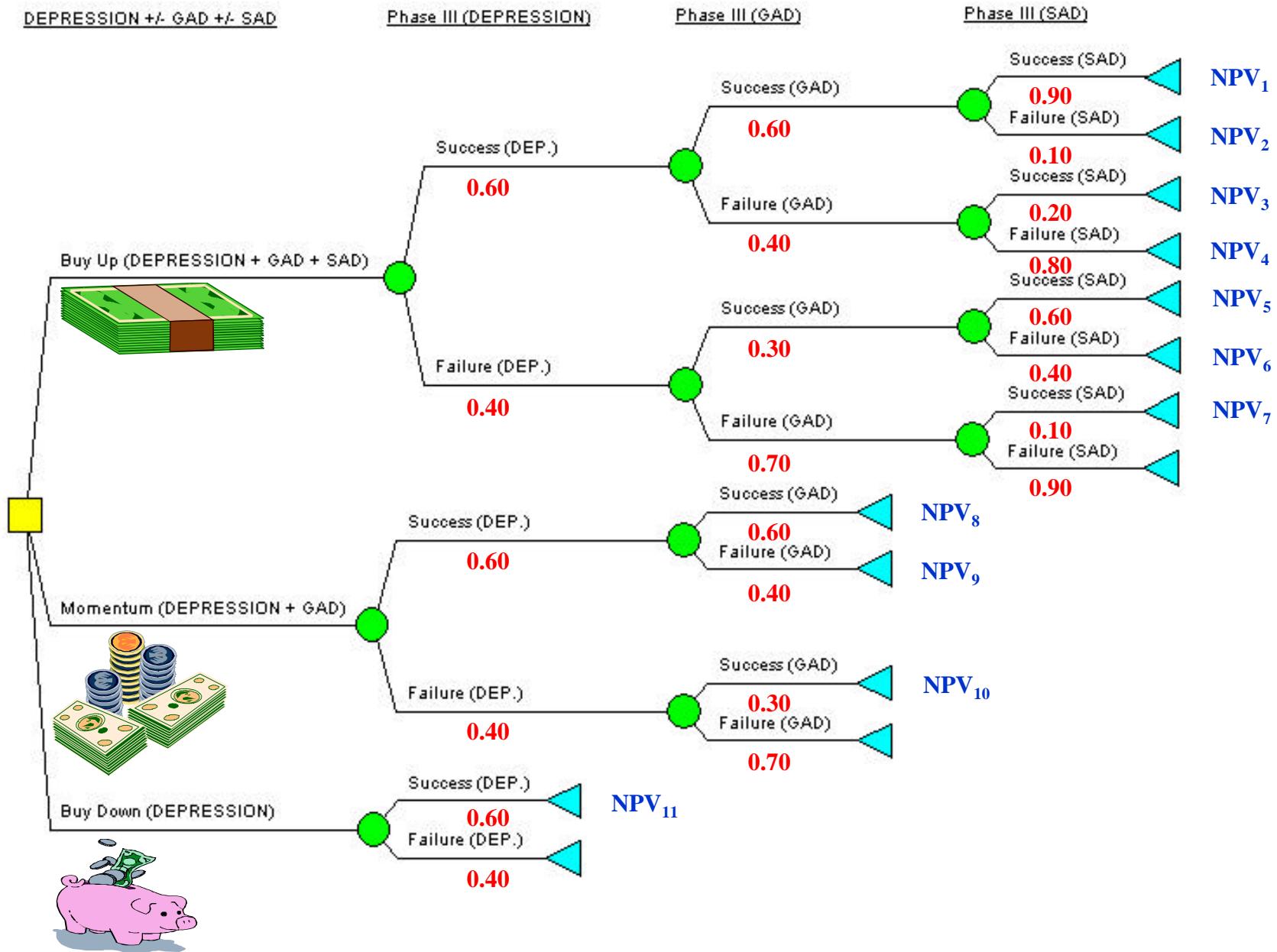
Assuming no correlation between diseases, asset value is relatively simple to determine



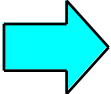
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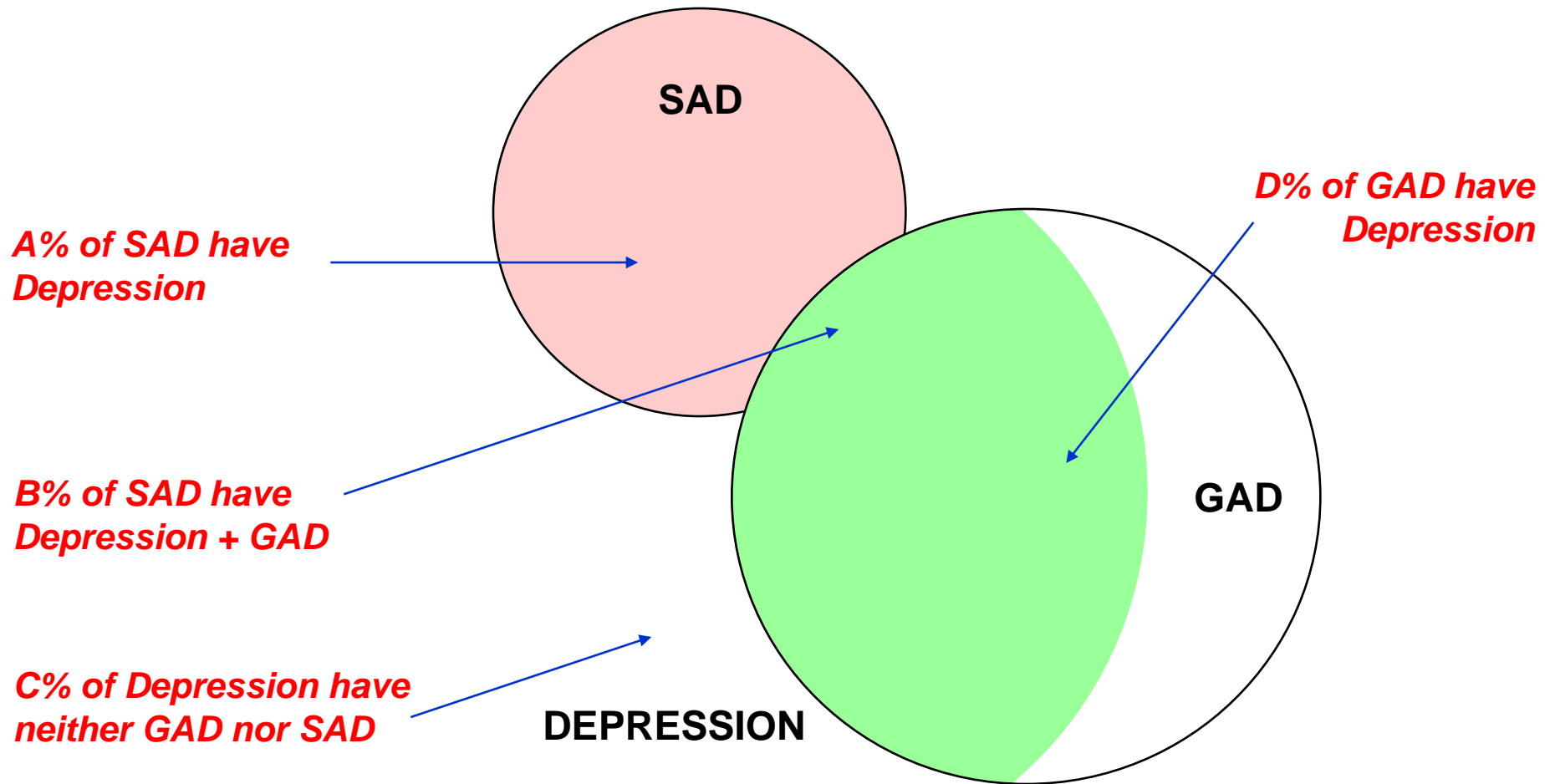
When disease hurdles are correlated, probabilistic dependence impacts expected asset value



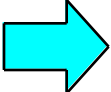
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Overlapping diseases create a serious challenge when estimating commercial uncertainty

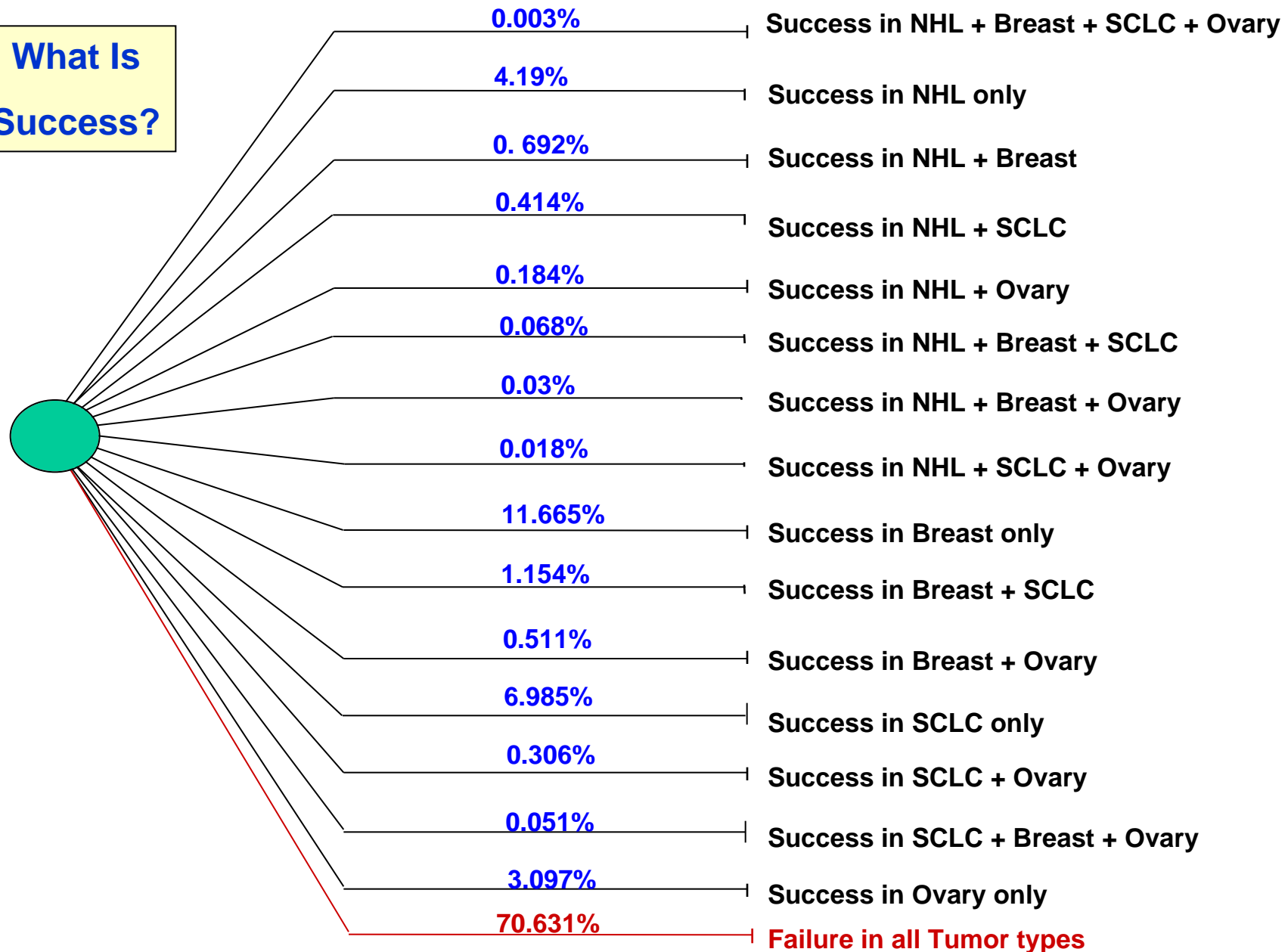


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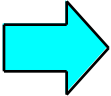
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In Oncology, the 'at least one' principle and 'off label' usage provide unique challenges to asset evaluation

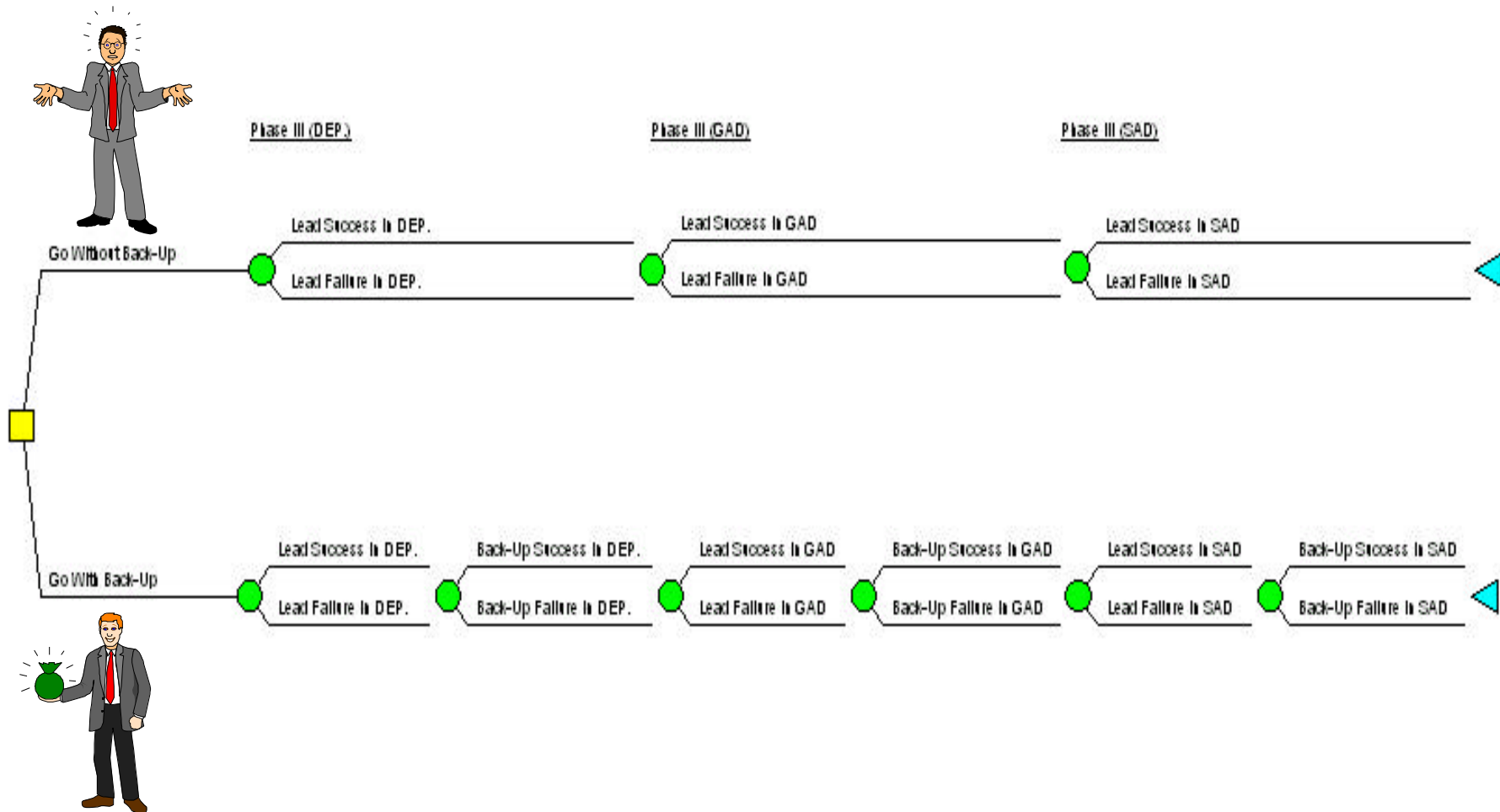
What Is
Success?



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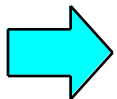
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The interplay between 'Lead' and 'Back-Up' assets provides yet another wrinkle to asset evaluation



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CONCLUSIONS

- ◆ While ostensibly simple, asset evaluation can be rather complex
 - ▼ It has become increasingly rare for an asset to be developed for a single disease
 - ▼ More often, one or more assets are targeting multiple diseases where there are both technical and commercial dependencies
- ◆ There are two seminal questions which need to be resolved before agreement can be reached on the value of an asset for portfolio selection
 - ▼ *“What strategy(ies) are you pursuing?”*
 - ▼ *“What is your definition of Success”? - (Dr. Jack Kloeber, DA & PM, B-MS)*