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Research Group: Portfolio Risk Management

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Motivation / Problem

The USAF has acquisition projects worth billions.

- > These programs have individual Program Managers (PM) who answer to a Program Executive Officer. (PEO).
- > The PEO is responsible to Congress, the Secretary of the Air Force, the Chief of Staff of the Air Force, the Combatant Commanders, and the American taxpayer. The PEO must determine the viability of his programs or the probability of the program achieving success.
- > PMs use many analysis reports to convey their information and the PEOs make strategic decisions based on these reports and the PMs briefings.
- > These briefings usually put the program in a positive light because the current system does not reward PMs who depict their programs in a less than favorable light.

Hence many programs continue when many should have been cancelled or redirected.

This has lead the senior leadership asking more a better way to ask their portfolio risk.

Key Questions

- > How should one measure risk at the portfolio level?
- > How do we define risk at the portfolio level?
- > Can we come up with a Risk Index against which the portfolios can be compared?

Proposal

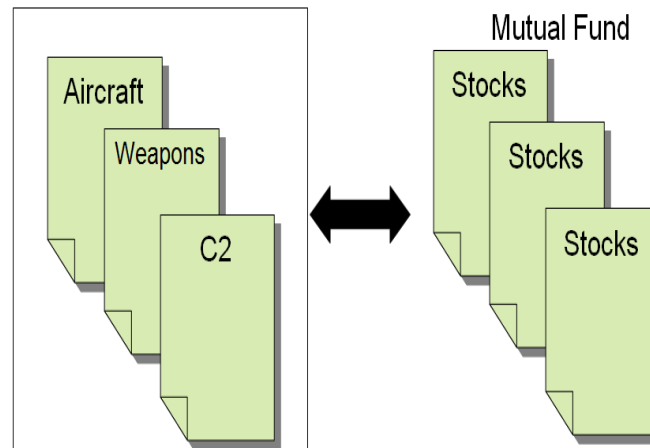
We intend to develop and measurement system or framework that will assess risk in portfolios with the goal to redirect resources to the more viable programs and to make critical decisions on the continuation or discontinuation of other programs.

Objective

- Main objective: minimizing risk while maximizing return
- Finding an efficient frontier along which a "risk" measure is compared against a measure of value

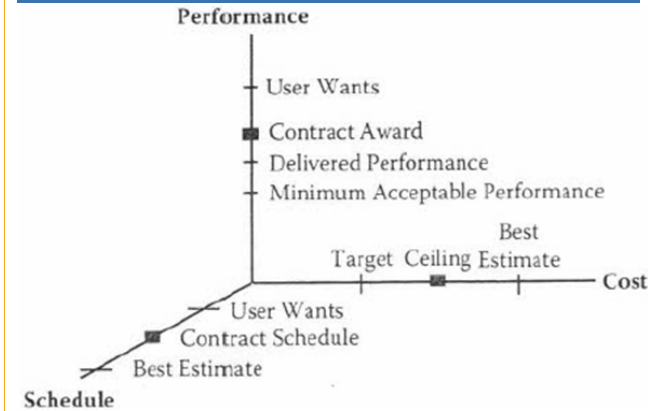


AQ as a Mutual Fund Portfolio



Two exceptions to this metaphor: liquidity & divisibility

Risk Categorization



Acknowledgements

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Relevant Literature

- MARKOWITZ, H. M. (1991). Foundations of Portfolio Theory. Journal of Finance. 46, 469-477.
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- GARVEY, P. R. (2009). Analytical methods for risk management: a systems engineering perspective. Boca Raton, CRC Press.

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