

Financial Risk Analytics - Domain



D/D/P Pre



Graphical sol'n
LPP

Linear Programming

min - Risk

max - Profit

Equity Risk :-

Interest Rate Risk

Currency risk / Exchange Rate Risk :-

Import

Gold

Max - 1019

BOP Crisis

Export

Commodity Risk -

$$RSI = 100 - \left(\frac{100}{1 + \text{ratio}} \right)$$

RSI - Moving

MACD - 26 12 9

Optimization Problem

① Decision variable

$w_1, w_2, w_3, \dots, w_{10}$

② Objective - min-risk

Profit = max

③

Constraints

$\text{avg return} \geq \text{desired return}$

10 stocks

Sum $w_1, w_2, \dots, w_{10} = 1$

$w_1, w_2, \dots, w_{10} \geq 0$

Matrix manipulations

① Matrix multiplication

$$\begin{array}{c} \frac{m \times p}{10 \times 156} \\ \hline \frac{p \times q}{156 \times 10} \\ \hline \end{array}$$

$$\begin{array}{c} m \times q \\ 10 \times 10 \end{array}$$

②

$\text{Var}(n)$	$\frac{\text{Sum } (x - \bar{x})(x - \bar{x}) / n}{\text{Sum } (x - \bar{x})(y - \bar{y}) / n}$
$\text{Cov}(x, y)$	$\text{Cov}(x, y) / S_x S_y$
$\text{Cor}(x, y)$	

③

Var - Cov