Sets

R: Set of regions r

C: Set of countries

L: Set of loan durations

G: Set of countries within regions

Decision Variables:

 = size of loan to country c of duration *l*



Parameters:

P: Millions of people below the national poverty line.

B: Budget of the World Bank to be disbursed.

A: Max amount that can be loaned to country *c* for each loan duration *l*

I: Interest rate of loan, based on loan duration *l*

S: Country Political & Institutional Assessment (Risk Score) of country *c*

Q: Regional loan quota

Objective Function:

Maximize Potential Poverty Reduction



Subject to:

 : Total amount of loans cannot exceed budget.

 : Weighted portfolio risk must be greater than or equal to (Higher is better, less risk)

 : Portfolio return must be greater than or equal to 1.5%

 : Each country can only receive one loan

 : Loan to each country must be less than or equal to max loan amount for loan duration

 : Loan quota to each region must be fulfilled

