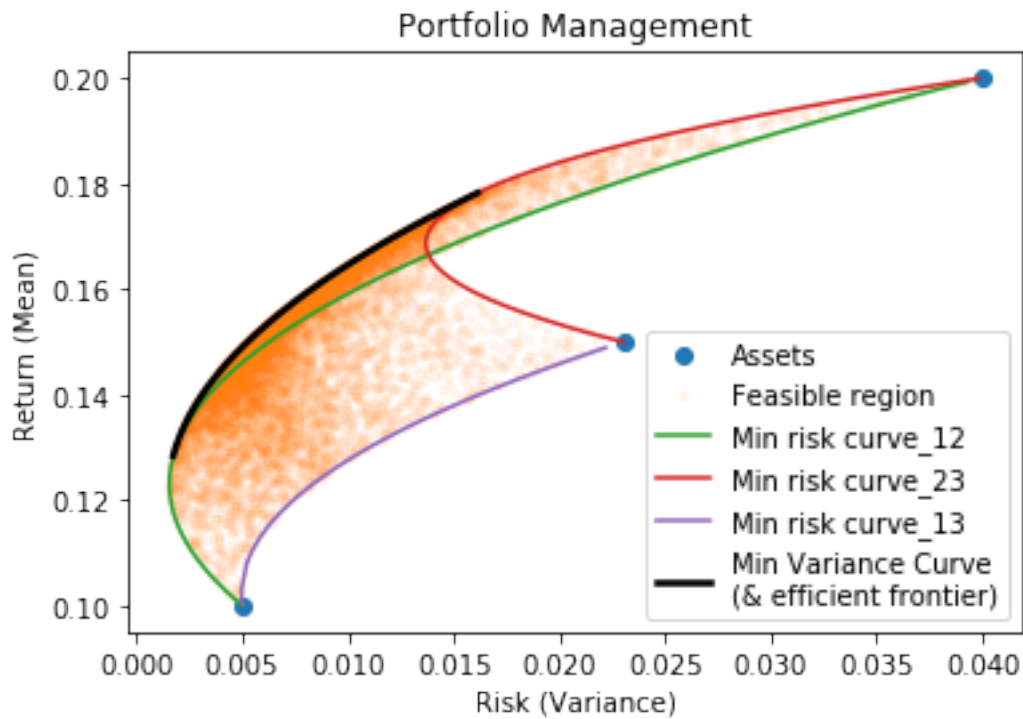


Ayush Sharma
(150123046)

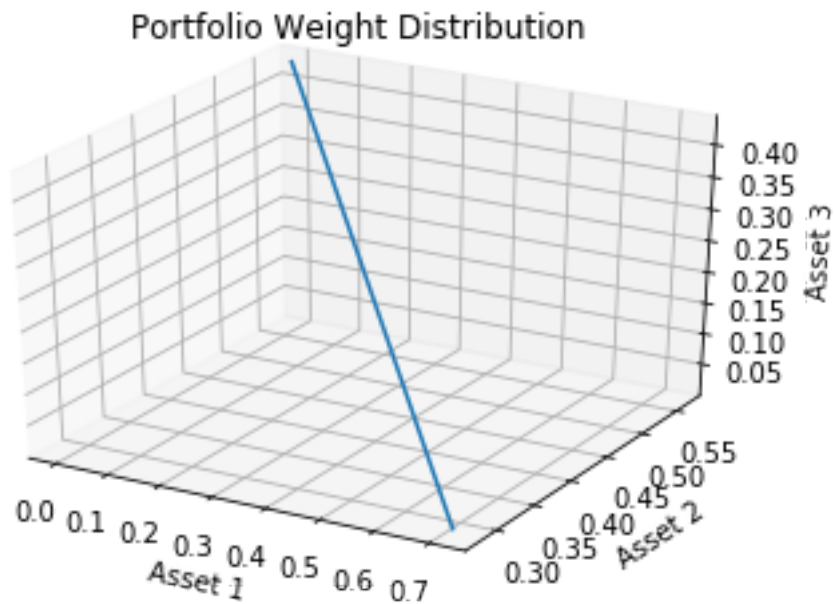
20 February 2018

QUESTION 1.

Plots for given data:



I.



II.

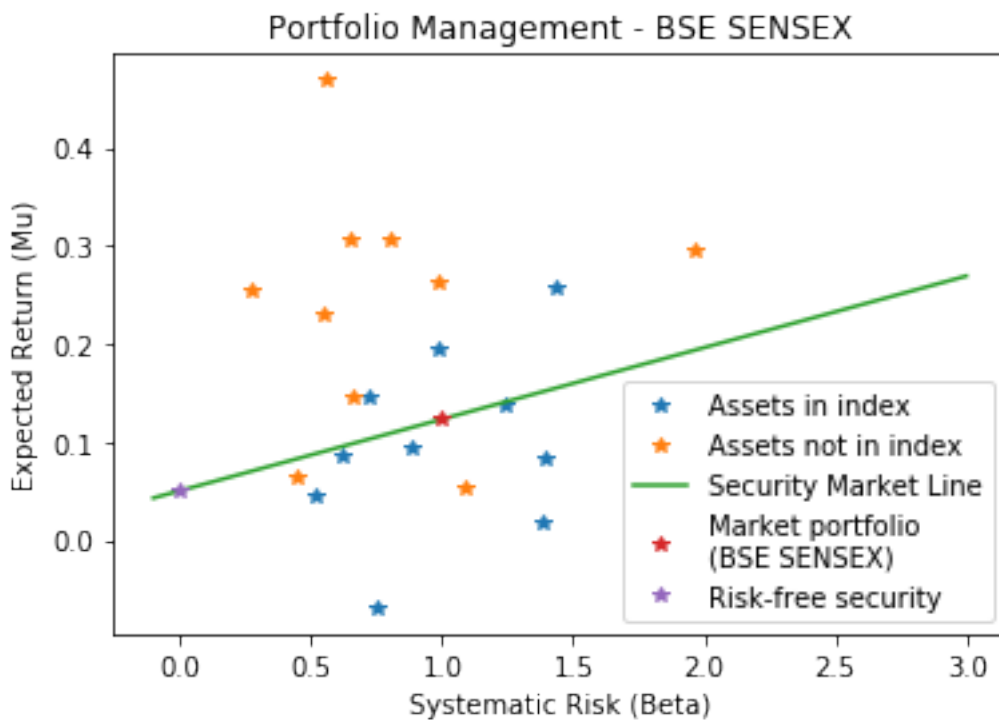
The equation that these weights satisfy is $W = W_0 + t \cdot d_W$, where $W_0 = [0.32638532, 0.43438532, 0.23922936]$, $d_W = [0.81083009, -0.32225298, -0.4885771]$, and $t \in \mathbb{R}$.

QUESTION 2.

Symbols for securities/equities:

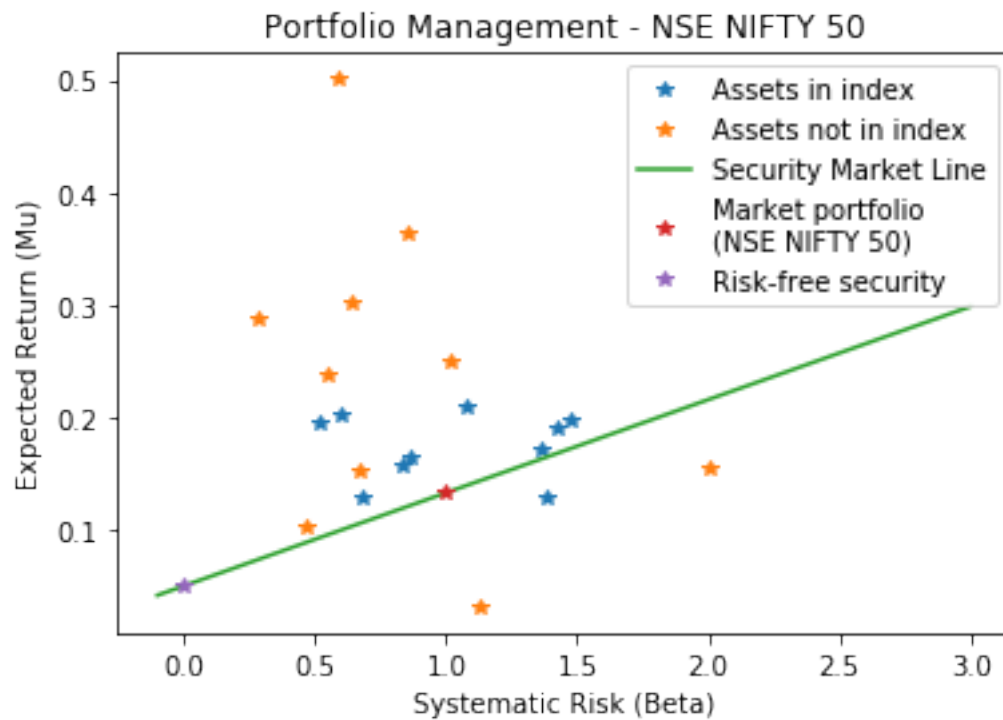
- I. BSE SENSEX: '^BSESN'
- II. BSE SENSEX Stocks:
'SBIN.BO', 'TATASTEEL.BO', 'LT.BO', 'RELIANCE.BO', 'INFY.BO', 'BHARTIARTL.BO', 'TCS.BO', 'TATAMOTORS.BO', 'SUNPHARMA.BO', 'ITC.BO'
- III. BSE Non-SENSEX Stocks:
'COLPAL.BO', 'BRITANNIA.BO', 'DLF.BO', 'HAVELLS.BO', 'DABUR.BO', 'HINDZINC.BO', 'PIDILITIND.BO', 'PGHH.BO', 'TATAPOWER.BO', 'CUMMINSIND.BO'
- IV. NSE NIFTY50: '^NSEI'
- V. NSE NIFTY50 Stocks:
'SBIN.NS', 'TATASTEEL.NS', 'LT.NS', 'RELIANCE.NS', 'INFY.NS', 'BHARTIARTL.NS', 'TCS.NS', 'TATAMOTORS.NS', 'SUNPHARMA.NS', 'ITC.NS'
- VI. BSE Non-SENSEX Stocks:
'COLPAL.NS', 'BRITANNIA.NS', 'DLF.NS', 'HAVELLS.NS', 'DABUR.NS', 'HINDZINC.NS', 'PIDILITIND.NS', 'PGHH.NS', 'TATAPOWER.NS', 'CUMMINSIND.NS'

Plots for the given data:



I.

Considering, BSE SENSEX index as market portfolio it can be said that the assets not in the index tend to give higher returns with lesser (also, read slightly) volatility than that of index (here, market portfolio) in comparison to the assets in the index.



II.

Considering, NSE NIFTY 50 index as market portfolio it can be said that the assets not in the index tend to give higher returns with lesser (also, read slightly) volatility than that of index (here, market portfolio) in comparison to the assets in the index.