Group 5 Project

Analysis of impact of Bank of Canada's COVID-19 actions on Canadian Banks

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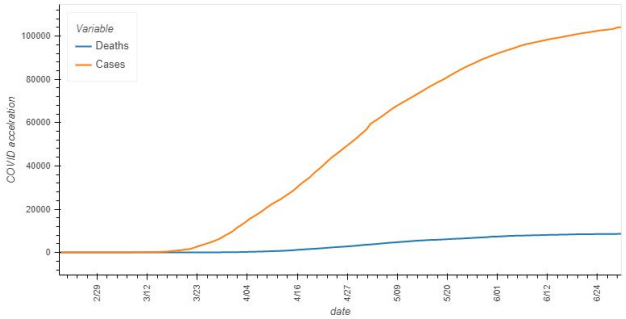
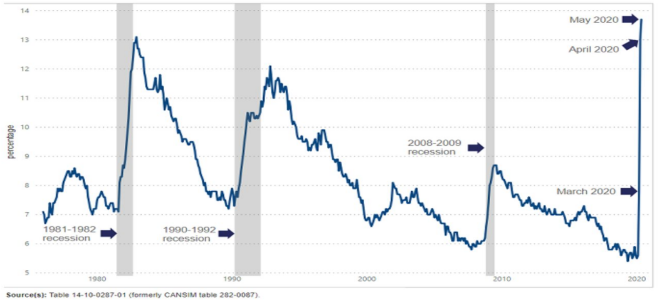
COVID comes to Canada and brings market carnage

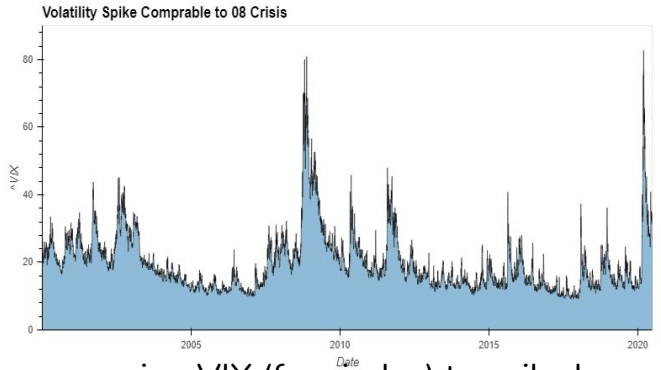


Rising COVID cases and lockdowns...



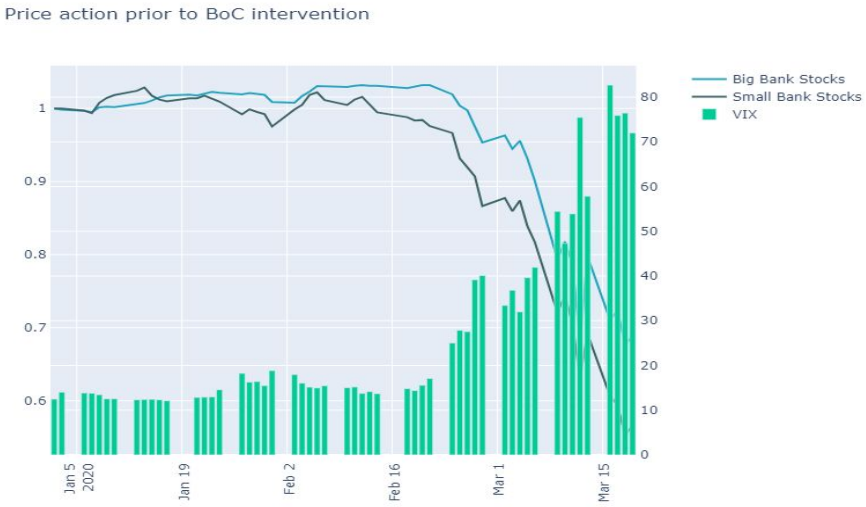
....record unemployment (2x 2008 GFC)...

....and benchmark decline steeper that GFC



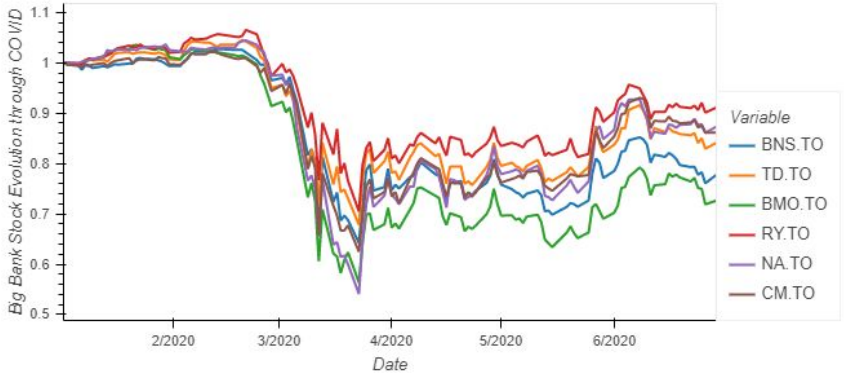
....causing VIX (fear index) to spike beyond '08 ...

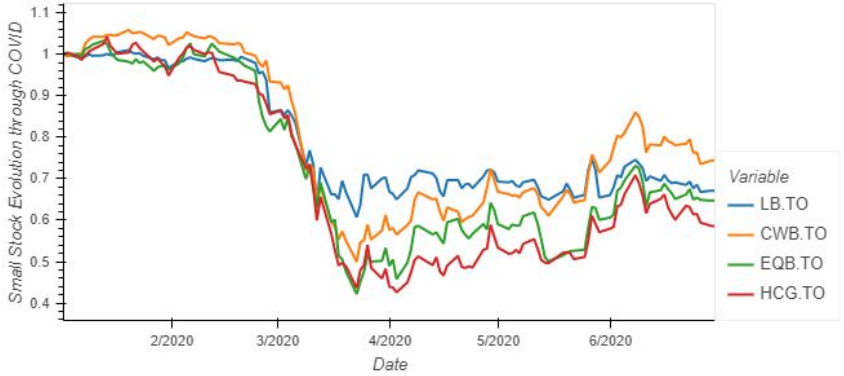
Massive impact on Canadian Banks



Canadian Banks given large mortgage and loan books significantly impacted.

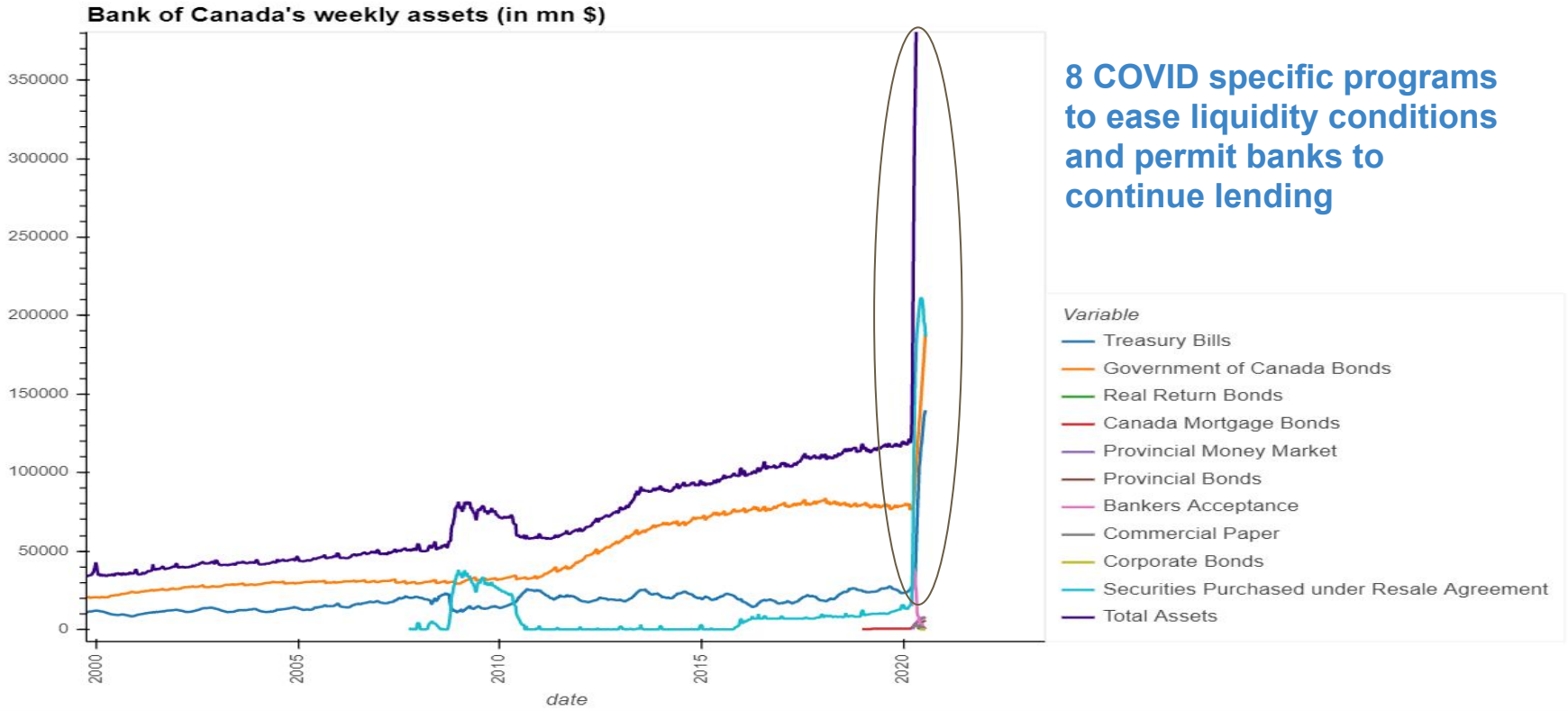
Figure plots an equally weighted index of large and small bank stocks which declines as volatility increases





Smaller banks given lesser diversification more severely impacted

Bank of Canada plans large intervention

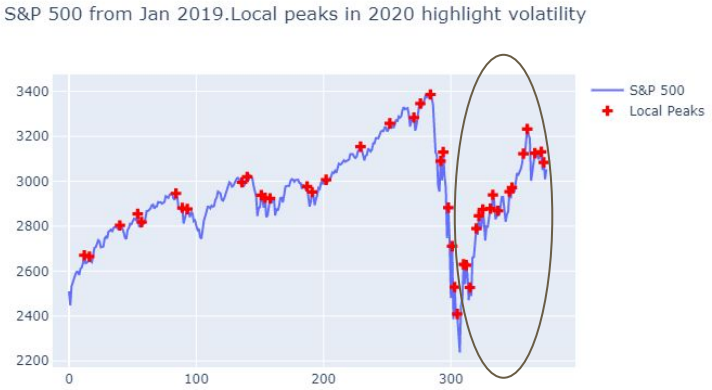


8 COVID specific programs to ease liquidity conditions and permit banks to continue lending

Scale of balance sheet growth and easing 6x higher vs. 2008 crisis

Quantitative easing actions start making an impact

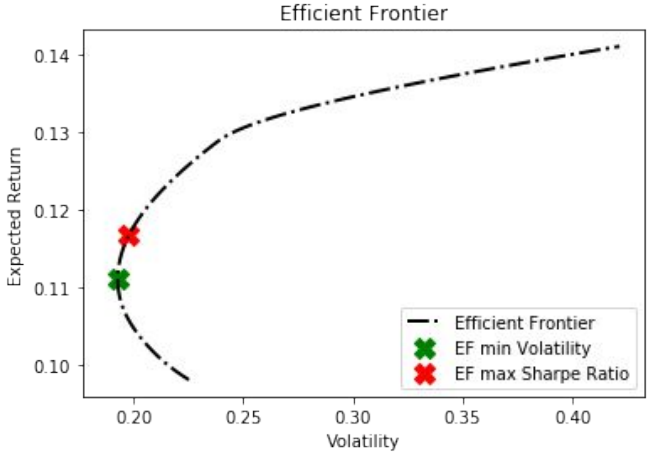
Bank prices start recovering as liquidity conditions improve and credit continues to flow



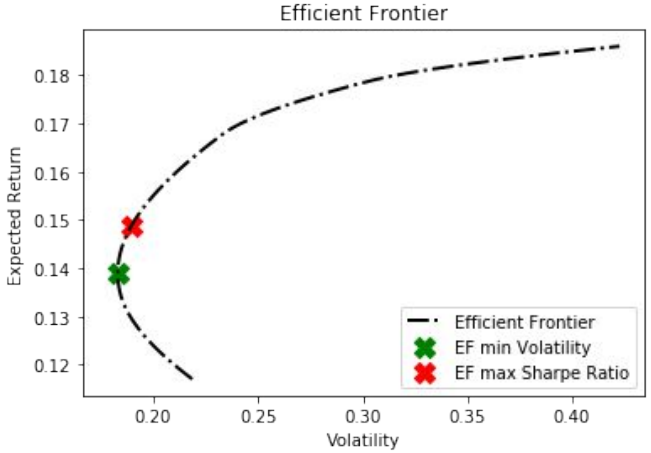
S&P and TSX starts to rally as evidenced by local peaks on an almost daily basis post global interventions

Volatility has impacted asset allocation on expected..

Mar-23 (peak crisis)



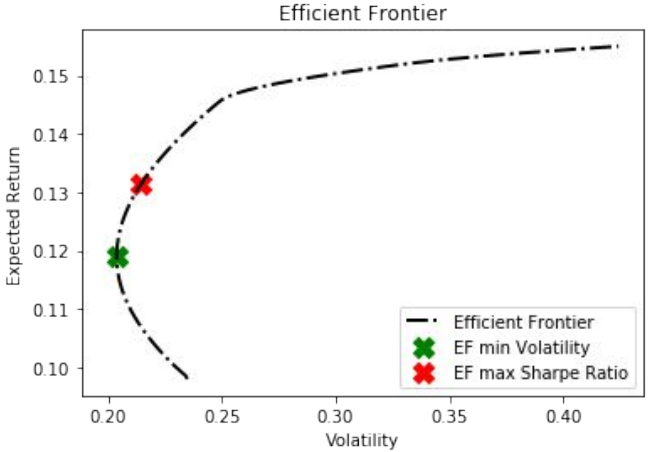
Jan-2020



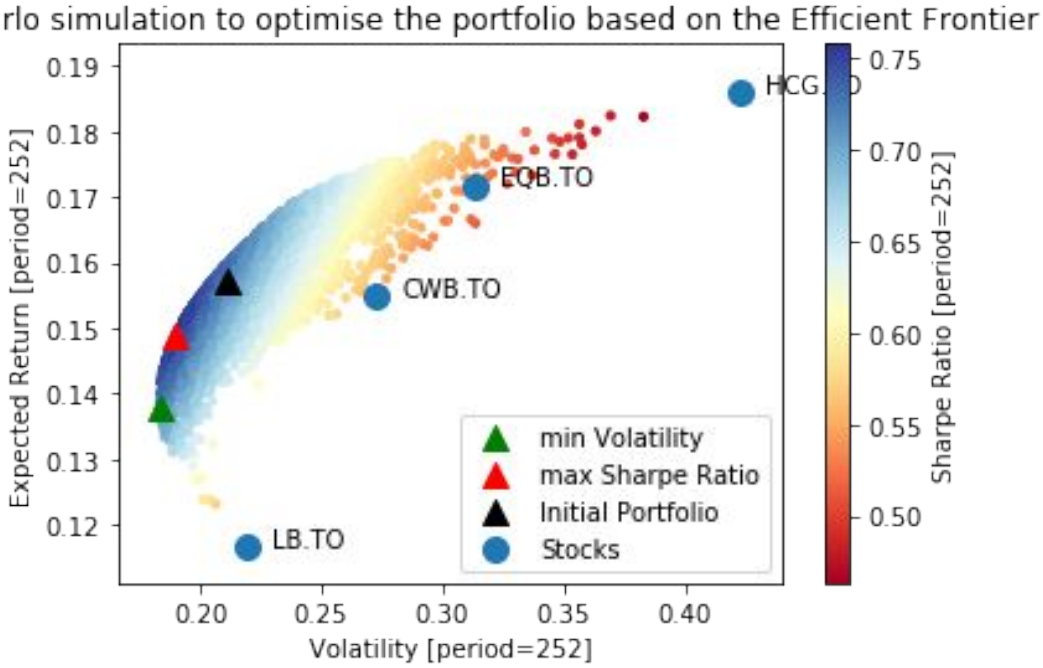
Meaningful long term declines of expected returns of an equally weighted portfolio of small bank stocks

Impacts tangency and min vol portfolios

Jun-30

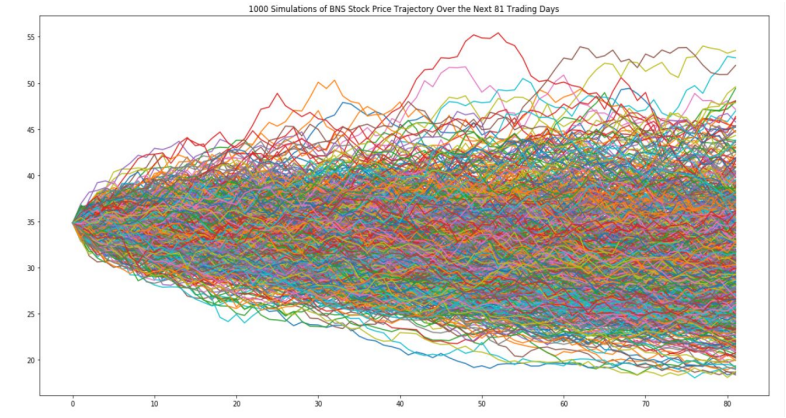


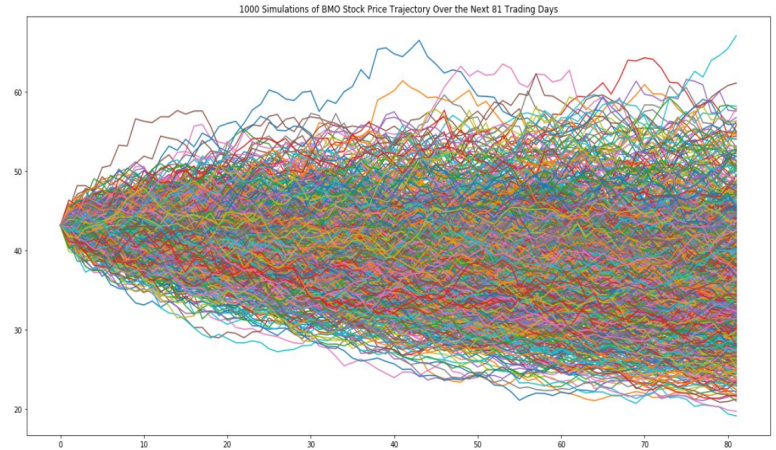
… and Monte Carlo basis at portfolio level



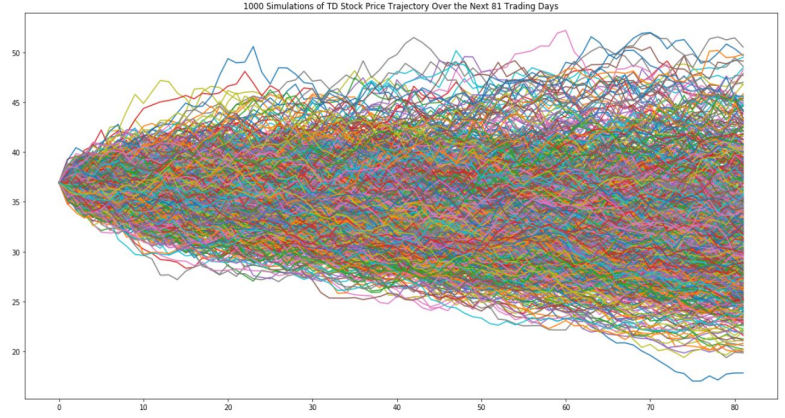
Monte-Carlo simulation produces comparable expectations and overweights LB relative to other banks

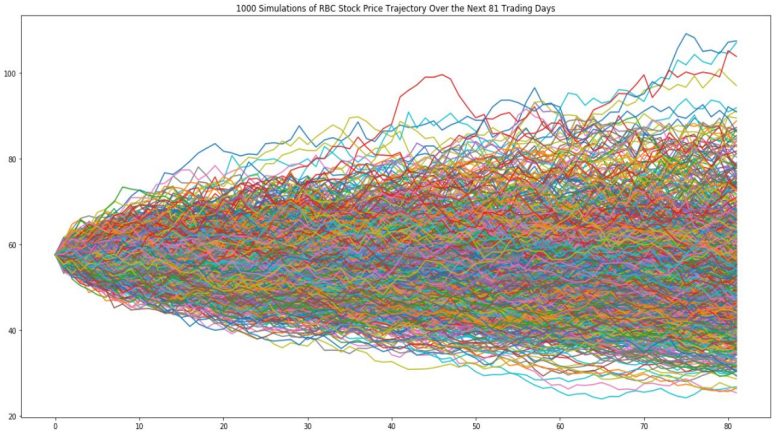
… and at individual stock level





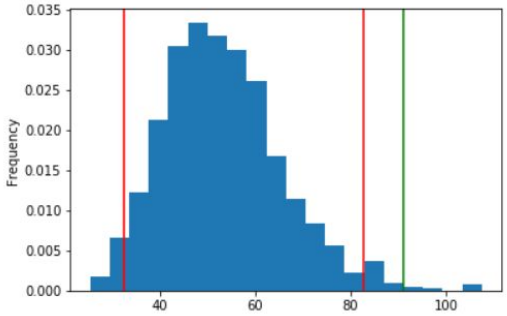
Monte Carlo simulation on crisis peak with a 81 day horizon to compare with ‘today’s’ prices



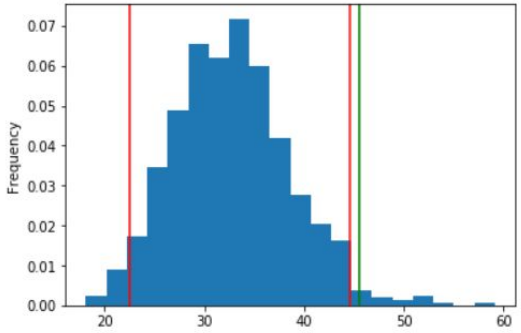


...But cost of doing nothing would have involved a bigger price

RBC actual price on 20 July 2020 in green vs the simulated price with confidence interval

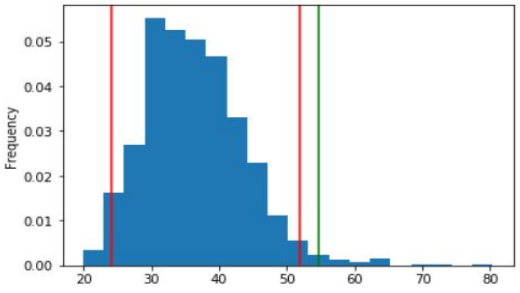


TD actual price on 20 July 2020 in green vs the simulated price with confidence interval



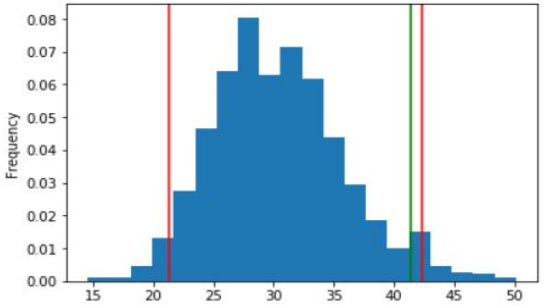
Slide compares compares actual price on July 20 with a Monte Carlo simulation generated at the peak of the crisis

BMO actual price on 20 July 2020 in green vs the simulated price with confidence interval



Validates that actual prices are beyond the 95%ile establishing statistical significance of interventions

BNS actual price on 20 July 2020 in green vs the simulated price with confidence interval



Thank You!

Any Questions?

Project Repo: https://github.com/NJ1219/UofT-Project-1-Group-5