ISyE 6402 Project Abstract

Team 3

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Our project will be based on the Air Travel dataset from Bureau of Transportation Statistics. This dataset contains the number of passengers on US flights. Along with this, we will use data relating to stocks, oil prices, and various other sources to further investigate air travel patterns.

**Datasets to be used**

* The U.S air passengers data provided by the Bureau of Transportation Statistics (2002-2017)
  + https://www.transtats.bts.gov/Data\_Elements.aspx?Data=1
* Unemployment data from the Bureau of Labor Statistics
  + https://data.bls.gov/timeseries/LNS14000000
* Interest rate data: 1-month US t-bill rate
  + https://fred.stlouisfed.org/series/DGS1MO
* Jet fuel prices from U.S Energy Information Administration
  + https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EER\_EPJK\_PF4\_RGC\_DPG&f=D
* Pricing information of the ARCA Airline Index(^XAL)
  + The index measures the performance of highly capitalized and liquid international airline companies.
  + https://finance.yahoo.com/quote/%5EXAL/history?p=%5EXAL

**Questions that we would like to answer**

* What is the long term trend of number of air passengers?
* What seasonalities exist in the number of air passengers?
* How to model the data?
* Which factors influence the number of air passengers with respect to time? Which lags are particularly important?
* How do the factors interact with each other (lead and lag)
* How well can the model forecast the data?

**Work breakdown:**

All members of the team will contribute equally to each phase of the project.

Tasks will include the following:

* Data cleaning
* Exploratory Analysis
* Analysis
* Final Report