**Capstone Project Proposal First Draft**

1. Research Question: Quantify the impact of container port congestion on container shipping rate.

2. Context of question:

* Container port congestion is at historical high as no. of container ships idled near US west coast container ports. [Fig 1]
* Global container shipping rate index, *Shanghai Containerized Freight Index (SCFI),* is around 4,500 as of Jan’21 which is 4.5x of its 1,000 level. [Fig 2]
* Port congestion (supply chain bottleneck) has led to short of stocks at retailers in the US, which the government is taking actions to solve.
* We want to monitor port congestion (no. of idled ships) and container shipping index changes.

*Fig 1: no. of idled ships near US west coast container ports.*

Graphical user interface, text, application

Description automatically generated

*Fig 2: Container shipping rate index, Shanghai Containerized Freight Index (SCFI).*

Diagram

Description automatically generated with medium confidence

3. Data source and collection:

* Container shipping index: <https://www.sse.net.cn/index/singleIndex?indexType=scfi> ; likely to be collected through scraping. [Fig 3]
* Port congestion: MariTraffic API, one call per day. [Fig 4]

*Fig 3: Webpage and view using Chrome Developer tool*

Graphical user interface, text, application

Description automatically generated

*Fig 4: Snapshot of API documentation*

Graphical user interface, text, application

Description automatically generated

4. Analysis: using time series and regression models to analyze relationship.