

# DATA VISUALIZATIONS & LEADERSHIP (DATA 1205-02)

FINAL PROJECT:

STOCK EXCHANGE DATA

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## Objective:

- Analyze the Dataset : **Stock Exchange Data** which has value details of stock like High, Low, Open, Close, Volume values from **1986- 2021**
- Analyze the Stock Exchange data from different regions like **United States, Hong Kong, China, Japan, Europe, Canada, India, Germany, Switzerland, Taiwan and South Africa**
- Analyze the data to find out the Stocks in demand by region, Profitable Stocks having high volume and price.
- Analyze the data to find out any trend patterns to predict the future trend lines.

Open USD

```
if [Index]= 'HSI' THEN
[Open]/7.692307692
ELSEIF [Index]='NYA' THEN
[Open]
ELSEIF [Index]='IXIC' THEN
[Open]
ELSEIF [Index]='000001.SS' THEN
[Open]/6.25
ELSEIF [Index]='N225' THEN
[Open]/100
ELSEIF [Index]='N100' THEN
[Open]/0.819672131
ELSEIF [Index]='399001.SZ' THEN
[Open]/6.25
ELSEIF [Index]='GSPTSE' THEN
[Open]/1.204819277
ELSEIF [Index]='NSEI' THEN
[Open]/100
ELSEIF [Index]='GDAXI' THEN
[Open]/0.819672131
ELSEIF [Index]='SSMI' THEN
[Open]/0.900900901
ELSEIF [Index]='TWII' THEN
[Open]/25
ELSEIF [Index]='J203.JO' THEN
[Open]/14.28571429
END
```

The calculation is valid.7 Dependencies




ApplyOK

## Calculated Fields

- Open USD : This computed Field was developed to obtain the open stock price of equities from several regional stock exchanges in USD.
- Close USD – Open USD : This computed field was developed to obtain the daily fluctuations of stock price.
- Close- Open : This computed field obtains the Closing Stock Price – Opening Stock Price
- High –Low : This computed field obtains the difference between Highest stock price and Lowest stock price.

Field Name:

Groups: Add to:

- ▼  North America
  - Canada
  - United States
- ▼  Asia
  - China
  - Hong Kong
  - India
  - Japan
  - Korea
  - Taiwan
- ▼  Europe
  - Europe
  - Germany
  - Switzerland
  - South Africa

☒ Show Add Location

☐ Include 'Other'

## Group: Geographical Region

- Group is created on the basis of geographical Region.
- Created 4 Continents North America, Asia, Europe, South Africa with their countries in that group.

# KPI (Key Performance Indicators) of Stock Exchange

## 1. GROWTH RATE:

- Stock Exchange data is analyzed to get an insight of **yearly growth rate of Stock**.

## 2. VOLATILITY RATE:

- Volatility is **the rate at which the price of a stock increases or decreases over a particular period**. Higher stock price volatility often means higher risk and helps an investor to estimate the fluctuations that may happen in the future.

## 3. VOLUME RATE OF CHANGE


- The volume rate of change is **the indicator that shows whether or not a volume trend is developing in either an up or down direction**.

## 4. DAILY PRICE MOVEMENTS OF STOCK

- The volume rate of change is **the indicator that shows whether or not a volume trend is developing in either an up or down direction**.

# Global Stock Index Analysis Dashboard

### Select Region



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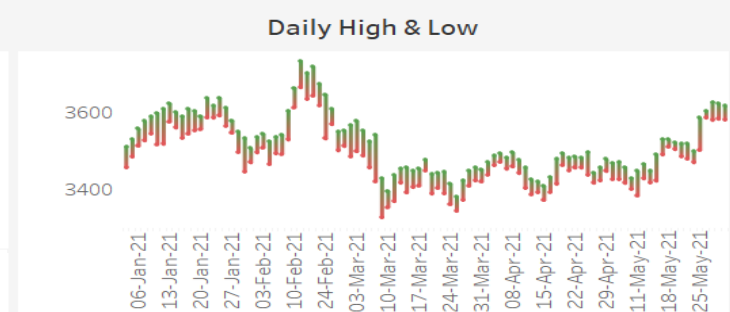
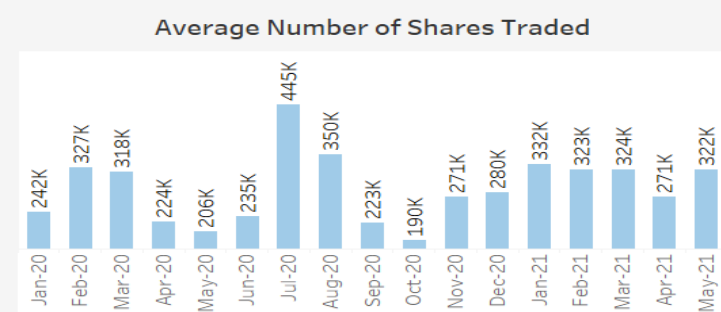
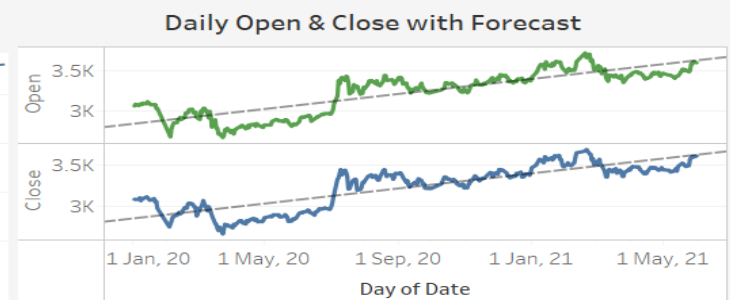
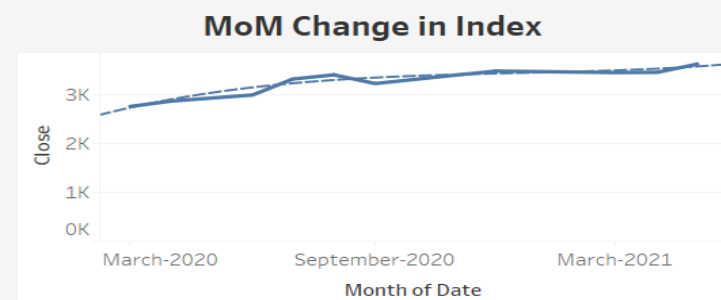
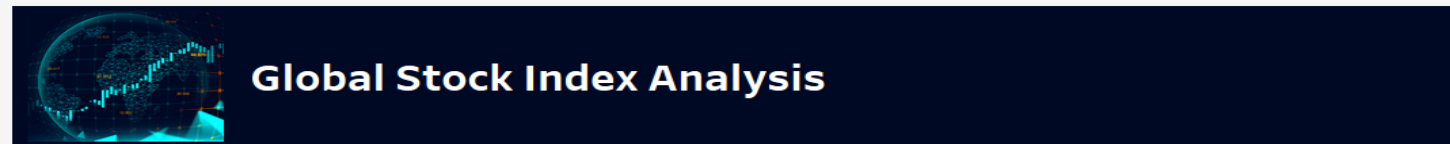
Asia

### Select Date Range

2020-01-01 to 2021-12-31

### Select Stock Index

Exchange	Index
NASDAQ	IXIC
New York Stock Exchange	NYA
National Stock Exchange of India	NSEI
Shanghai Stock Exchange	000001.SS
Shenzhen Stock Exchange	399001.SZ
Hong Kong Stock Exchange	HSI
Taiwan Stock Exchange	TWII
Euronext	N100
Frankfurt Stock Exchange	GDAXI
Johannesburg Stock Exchange	J203.JO
SIX Swiss Exchange	SSMI
Tokyo Stock Exchange	N225
Toronto Stock Exchange	GSPTSE



# Global Stock Index Analysis Dashboard

Global Stock Index Analysis Dashboard is the Analysis of Stock Exchange which has following filters user can select or change

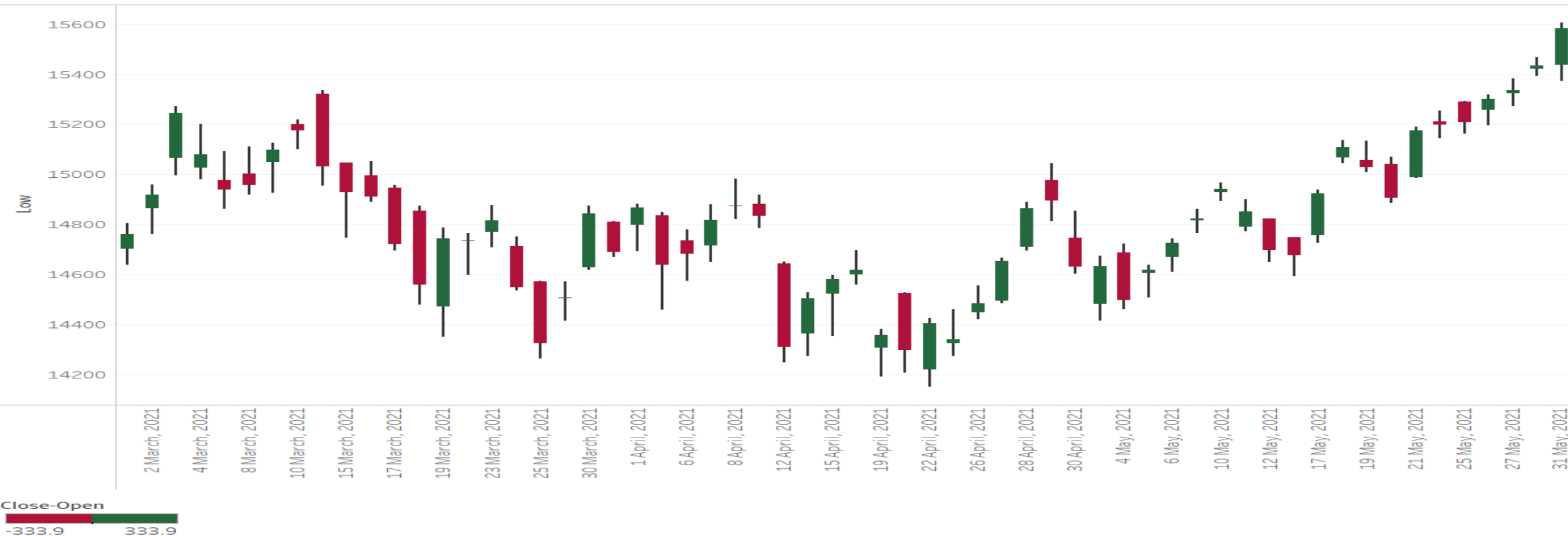
- **Geographical Region Filter**: Allows user to select the region to analyse the Stock Exchange
- **Date Filter** : Allows user to select the Date range for analysing Stock Exchange
- **Stock Index Filter** :Allows user to select any particular Stock Index to analyse the stock metrics

All the charts on the Dashboard are being filtered by above criteria and provides with more insights.

# Market Index Daily Trend

Here, A candlestick is a style of financial chart used to describe price movements of a stock currency. It shows **daily stock price movements** filtered by Stock Market Index. It shows the open and close price of stock with high and low price values. Where color shows the positive and negative price movement.

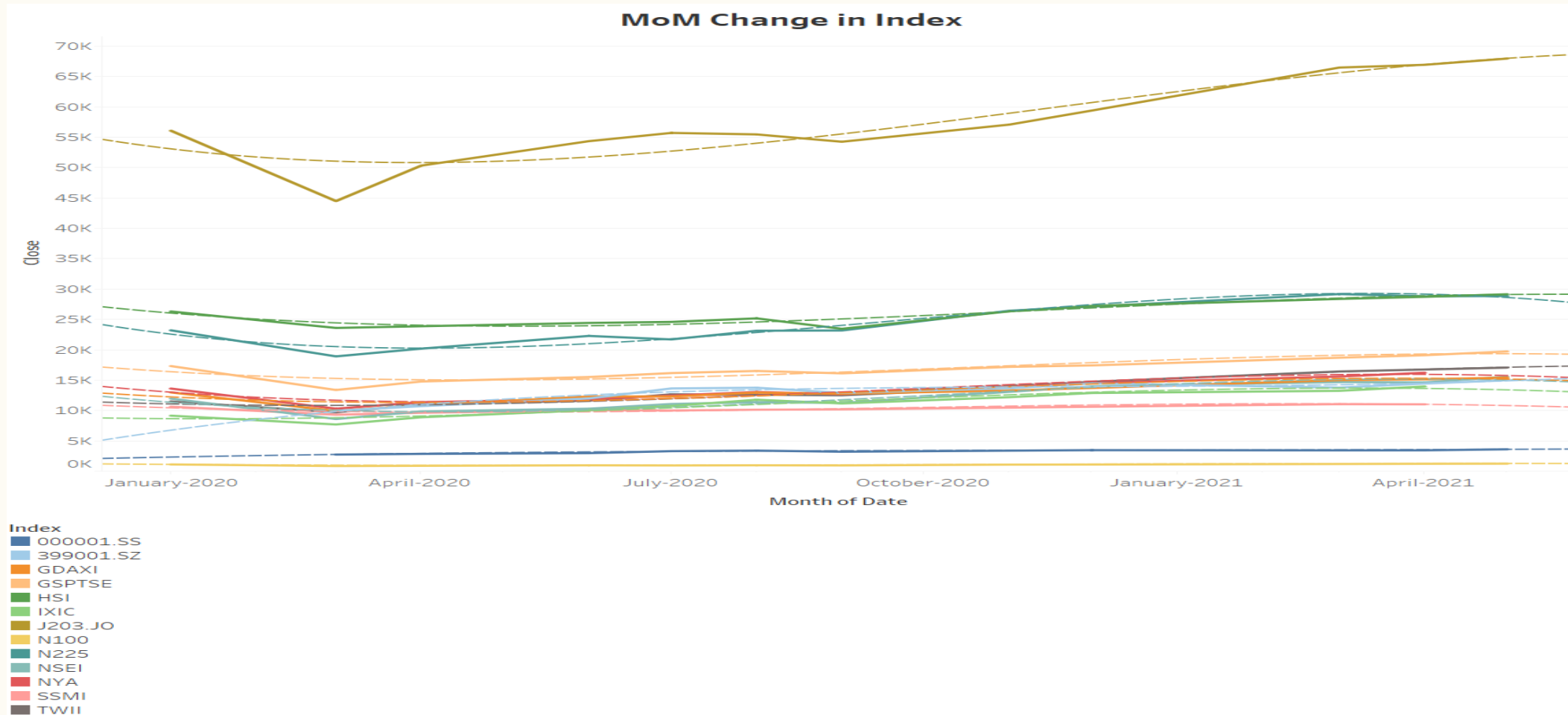
Market Index Daily Trend





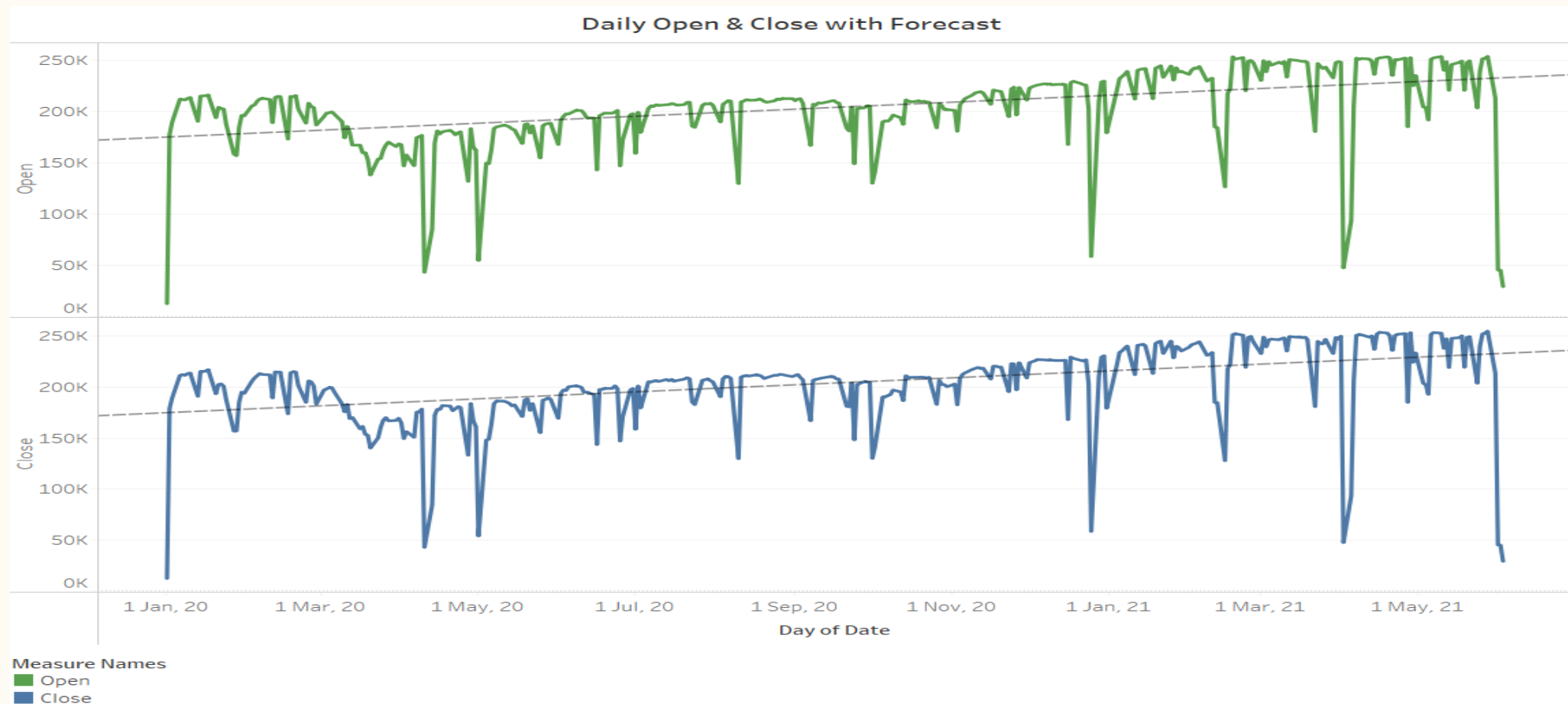
# Month Over Month Change in Index

- MoM change in Index shows the change in Stock Exchange Month over Month.
- It also shows the R squared trend line for more accurate predictions for future analysis



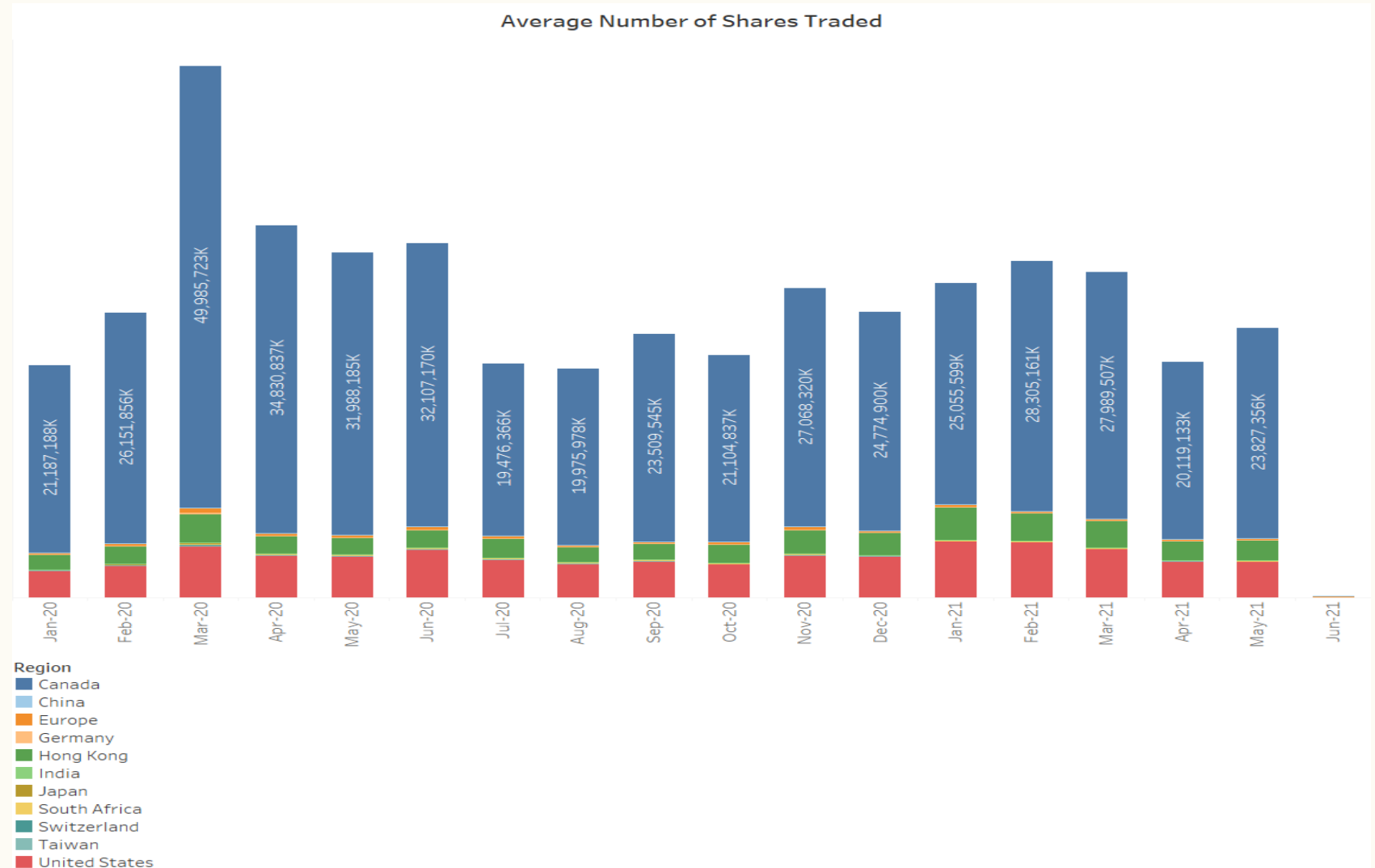
# Daily Open & Close Forecast

- Daily Open & Close Forecast shows the daily fluctuations happened in the Stock Exchange



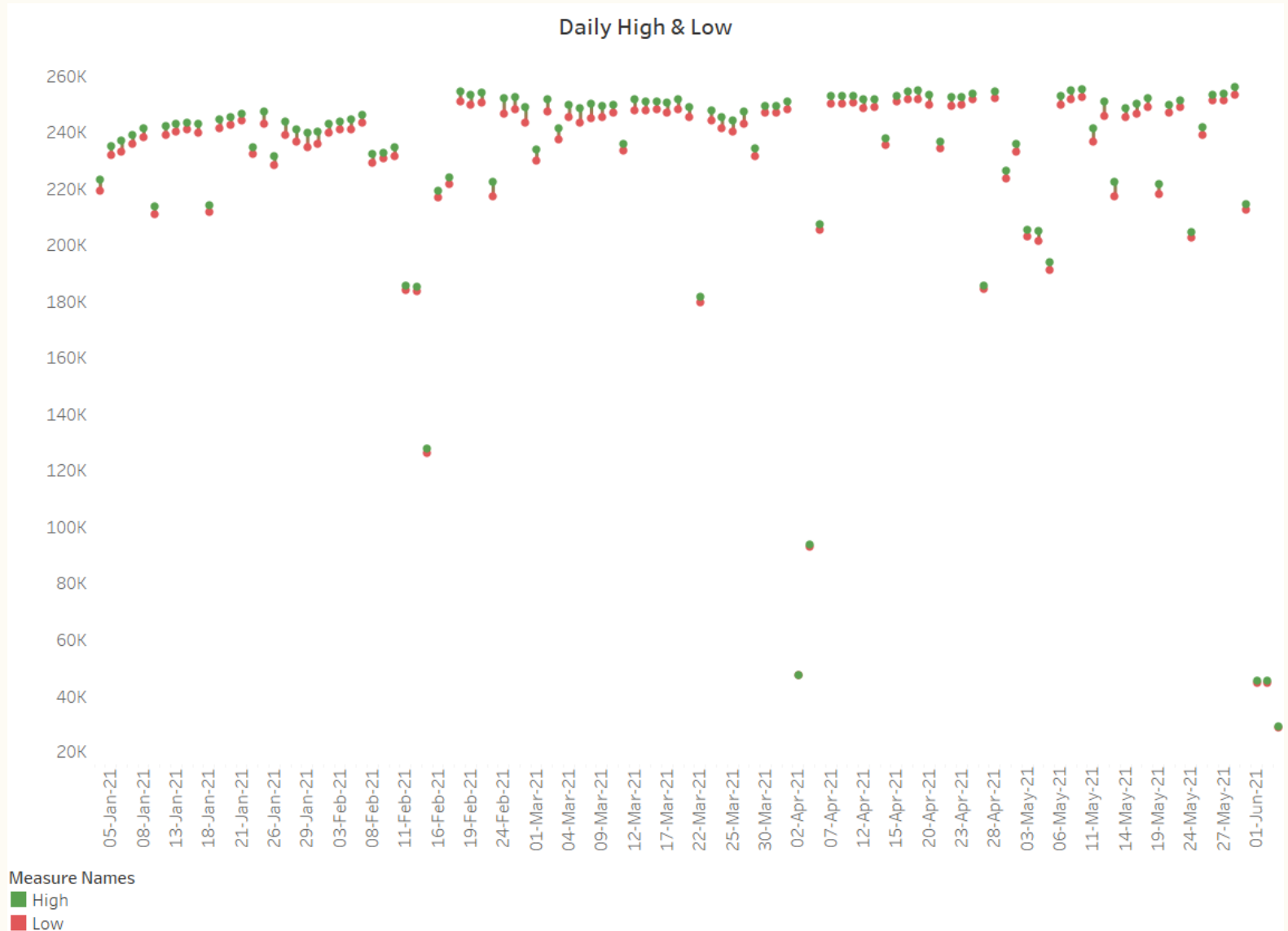
## Average Number of Shares Traded

- Avg. no. of shares traded shows the Region wise volume of stock exchange on monthly basis
- This graph shows that the Canada has maximum no of shares traded.
- Germany, South Africa are less traded.



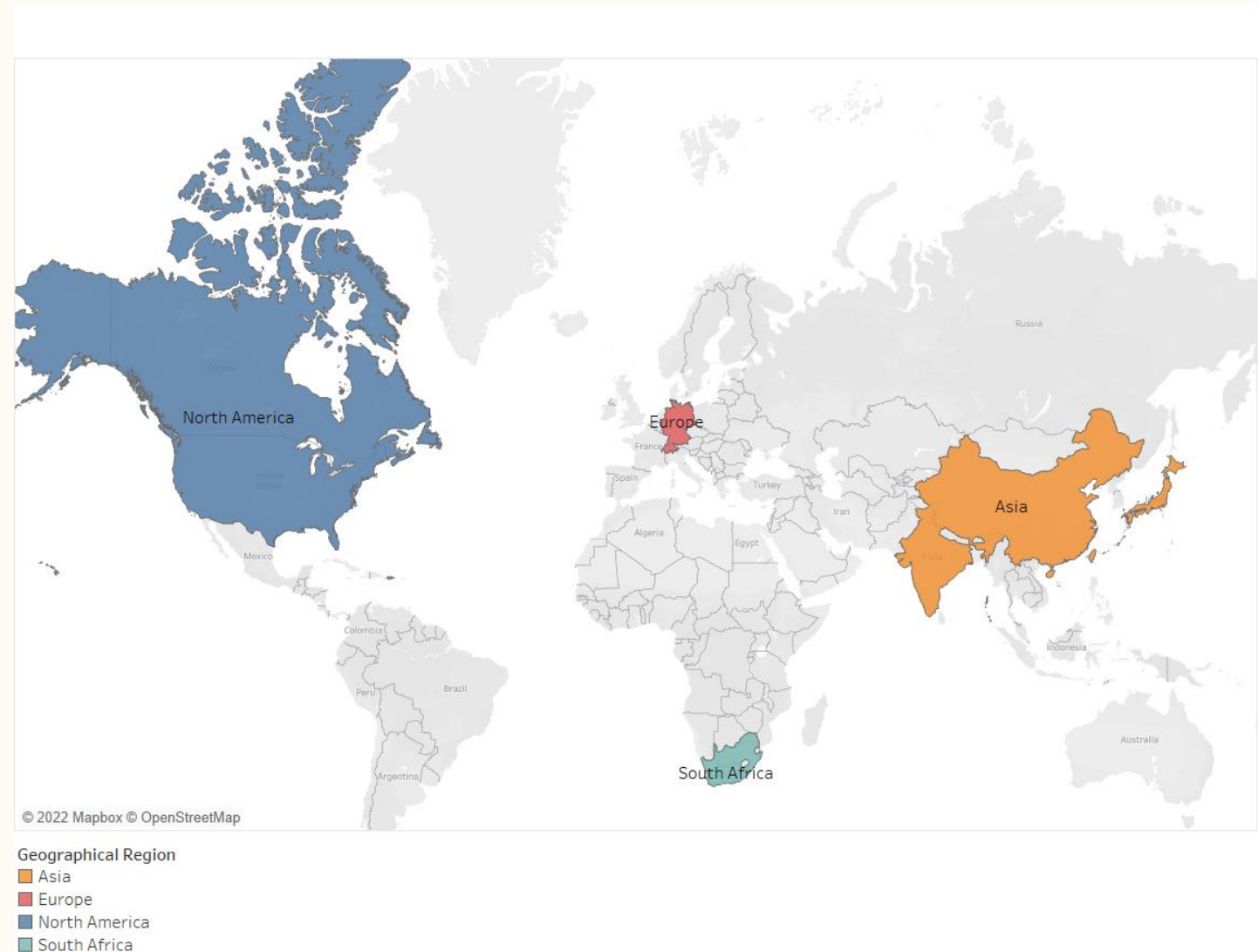
# Daily High and Low

- Daily High and Low shows the daily fluctuations in the Stock Exchange having the highest stock price and lowest stock price.
- Stock price seems nearly about in range of 210K to 240K
- There are some outliers which has both high and low stock prices i.e. less than 120K



# Geographical Region of Stock Index

- This graph shows the geographical Region of Global Stock Exchange
- There are mainly 4 geographical regions-
- Asia
- Europe
- North America
- South America



# Story: Toronto Stock Exchange Analysis 2015-2021

- Story is about the Toronto Stock Exchange Analysis for years 2015 to 2021
- It starts with the Question “What is the Region wise Average Volume Rate?”
- As we can see, Canada has the maximum number of shares traded in the years 2015 to 2021
- Canada has Average volume rate of 23 Billion.

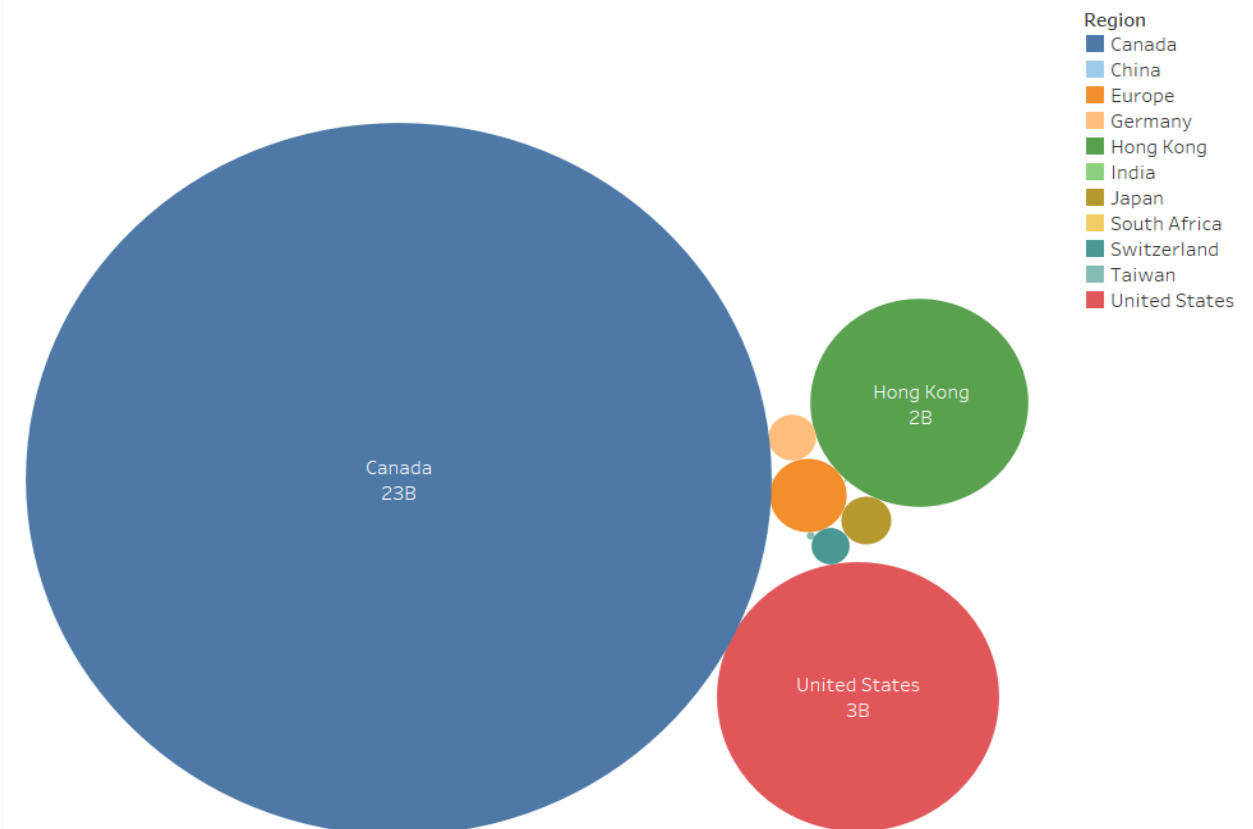
## Toronto Stock Exchange Analysis 2015-2021

What is the Region wise Average Volume Rate?

How many Stock Index each Region has?

What is YoY change in Toronto Stock Exchange?

Covid Impact on the Index Stock Exchange



# Story: Toronto Stock Exchange Analysis 2015-2021

- Here, Let's focus on the **Stock Index each Region has and its names.**
- It starts with the Question **"How many Stock Index each Region has?"**
- As we can see, **Only the United States has 2 Stock Index**
- Canada has only one Stock Index i.e. Toronto Stock Exchange. Let's go deeper into that.

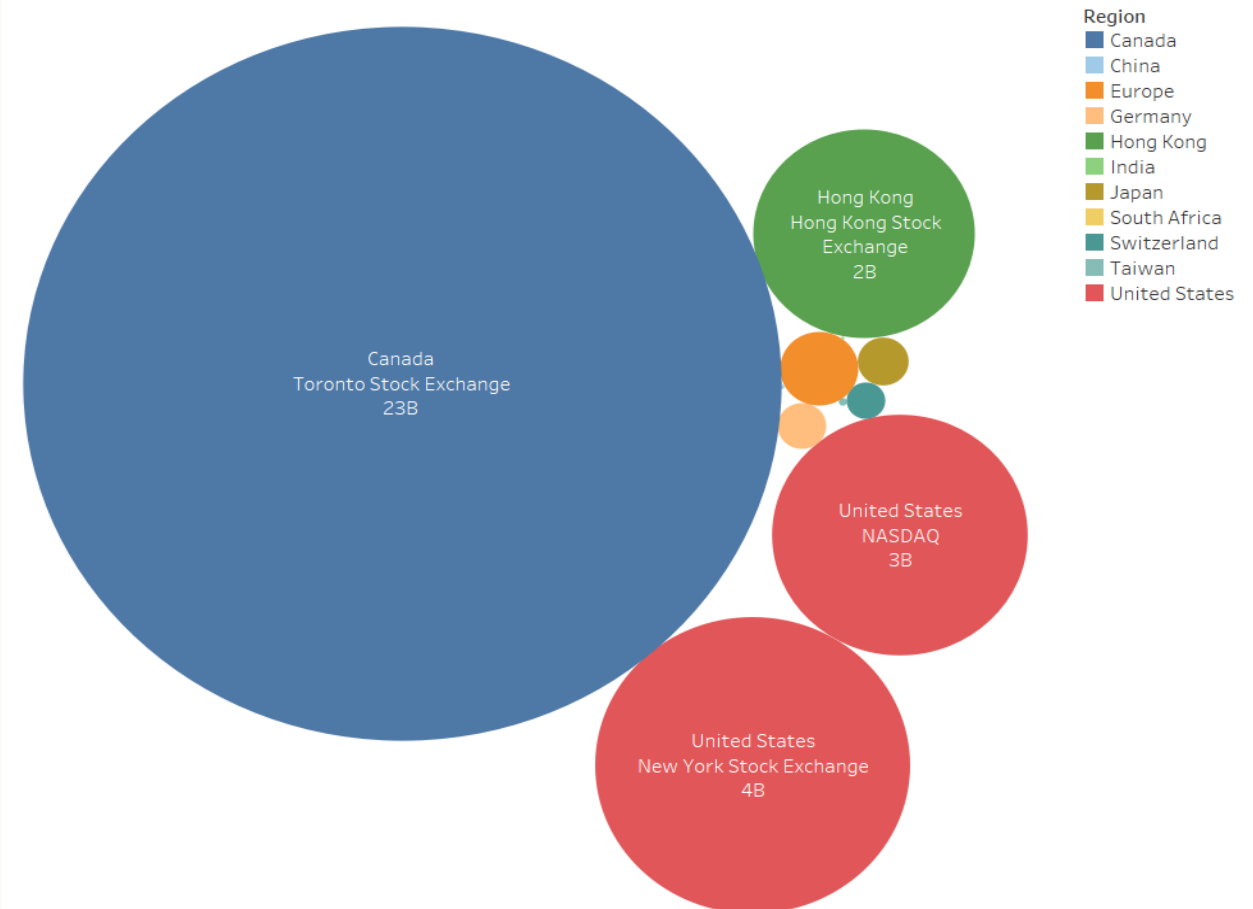
## Toronto Stock Exchange Analysis 2015-2021

What is the Region wise Average Volume Rate?

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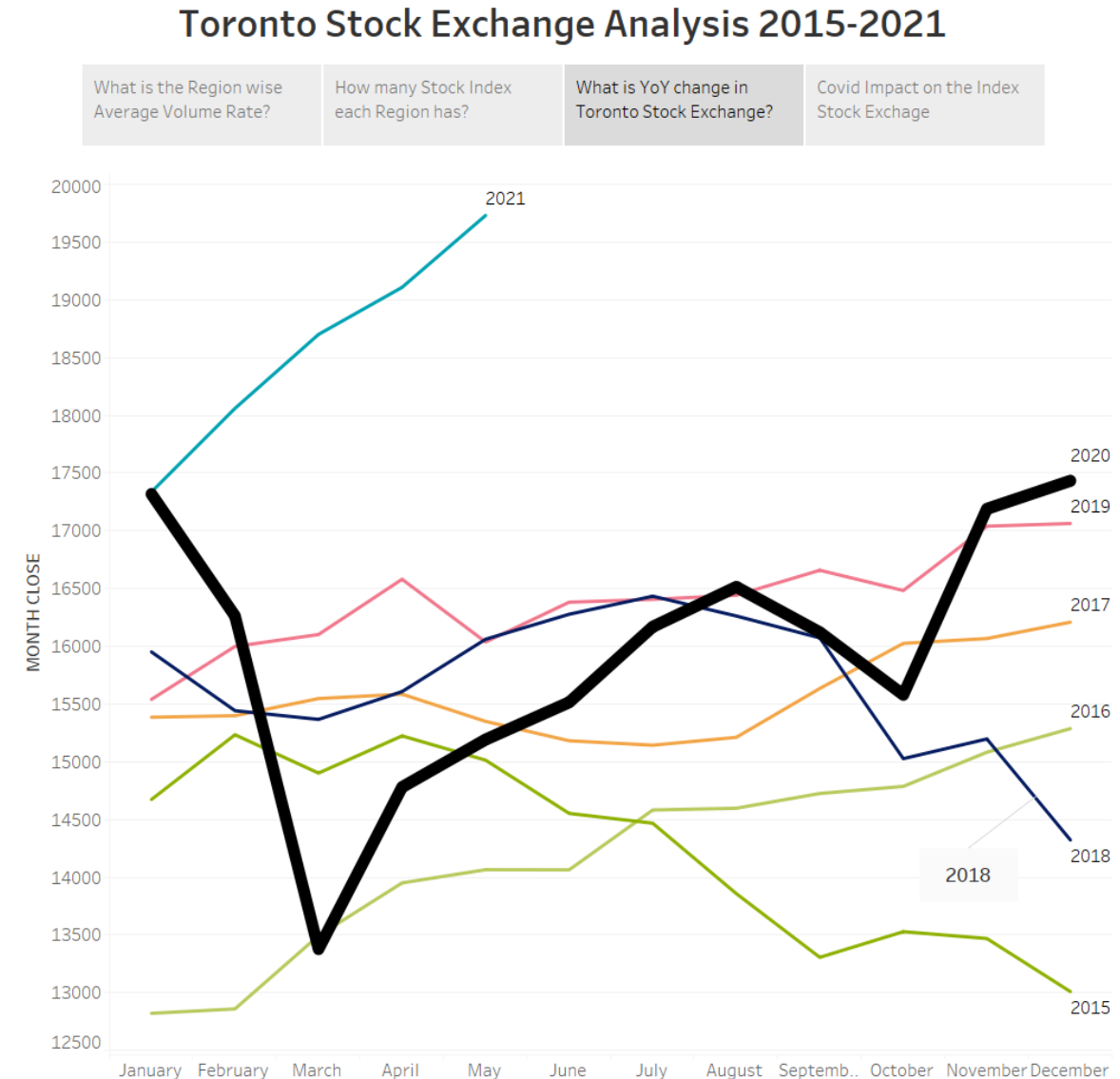
What is YoY change in Toronto Stock Exchange?

Covid Impact on the Index Stock Exchange



# Story: Toronto Stock Exchange Analysis 2015-2021

- This Story part is about the Year Over Year change in Toronto Stock Exchange for years 2015 to 2021
- It starts with the Question “What is the YoY change in Toronto Stock Exchange?”
- As we can see, 2020 Stock Exchange was dropped in March 2020 and October 2020
- Also we can see the 2021 Stock Exchange started with positive approach going upward.
- Stock Exchange was affected in 2018 by Recession as we can see a drop in Stock Exchange Trend in 2018.





# Story: Toronto Stock Exchange Analysis 2015-2021

- This Story part is about the **Covid Impact** on Toronto Stock Exchange by analysing **Month Over Month Change in Market Percentage** for years 2015 to 2021
- As we can see, 2020 Stock Exchange was **dropped in March 2020 by 17.74%** from previous month as **COVID 19** was at its peak in that time
- And on **October 2020** Stock Exchange was **dropped by 3.35%** from previous month due to **second wave of COVID 19**.
- Also we can see the **April-2021** Stock Exchange started with positive approach going upward having **3.26%** increase in stock from previous month.
- **We can predict the future Stock Exchange by R-squared Trend line which is showing positive results for next quarter of 2021 for Toronto Stock Exchange. Hence you can Invest in Toronto Stock Exchange which will be beneficial.**

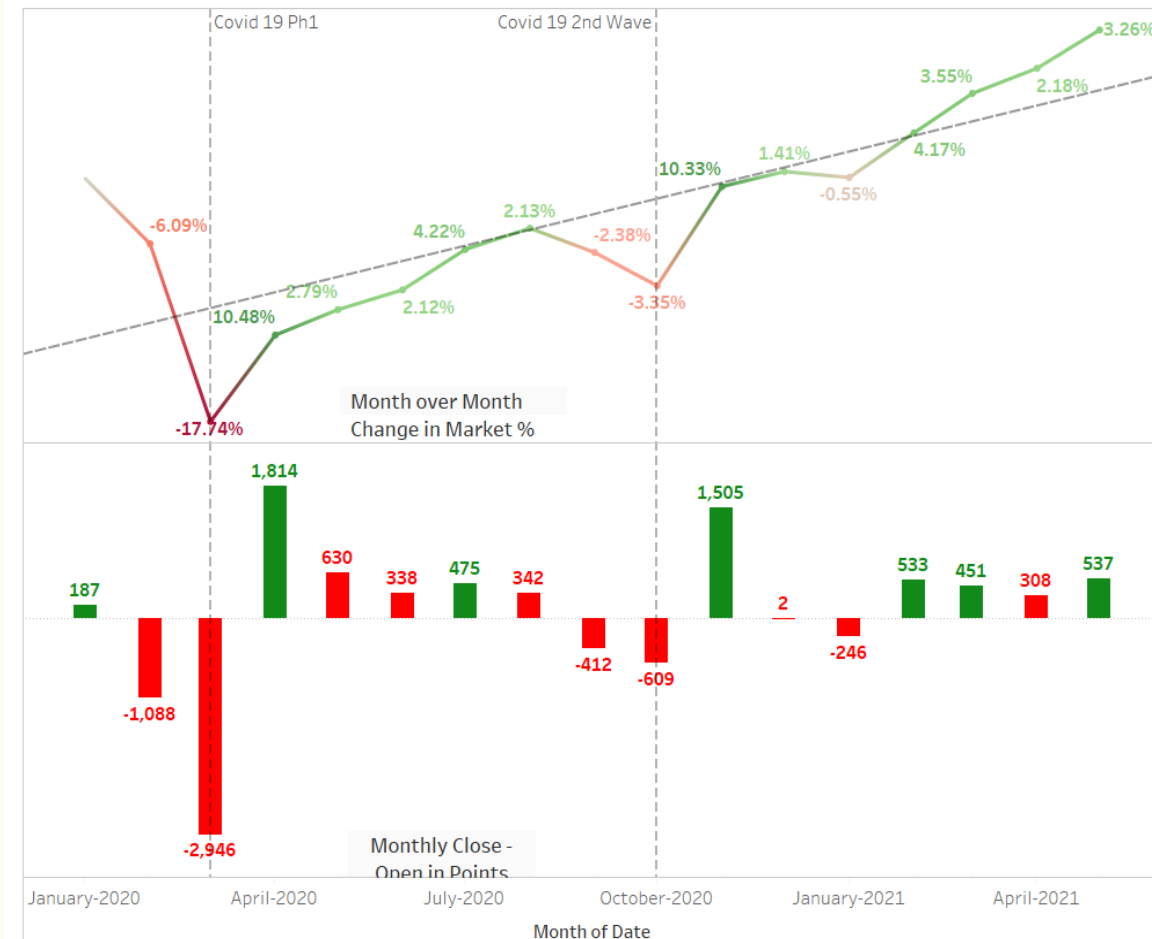
## Toronto Stock Exchange Analysis 2015-2021

What is the Region wise Average Volume Rate?

How many Stock Index each Region has?

What is YoY change in Toronto Stock Exchange?

Covid Impact on the Index Stock Exchange



# Conclusion

- We can analyse the Global Stock Exchange data using the Dashboard applying different filters.
- Sr. Management can take decisions about Stock Exchange Investment based on this analysis.
- One can Invest in Toronto Stock Exchange as it is predicting high stock price in next quarter of 2021.

