[Data Analyst Nanodegree] Hyungyung. Lee

Project 1

Explore Weather Trends

1. **Extracted the city level and global data with writing SQL queries below.**

   1) Query used to find my city in city_list

   ```
   SELECT *
   FROM city_list
   WHERE city LIKE '%eoul%';
   ```

   2) Query used to extract city level data

   ```
   SELECT year, avg_temp
   FROM city_data
   WHERE city = 'Seoul';
   ```

   3) Query used to extract global data

   ```
   SELECT *
   FROM global_data;
   ```

2. **Opened up the CSV and calculated moving average using Excel**

   The moving average of the temperature was calculated according to two criteria, 5-year, and 10-year. Considerations for the calculation are as follows:

   1) Seoul's 10-year MA showed more clearly the trend of climate change than the five-year MA. Therefore, I decided to choose 10-year MA for trend comparison. (Figure1)

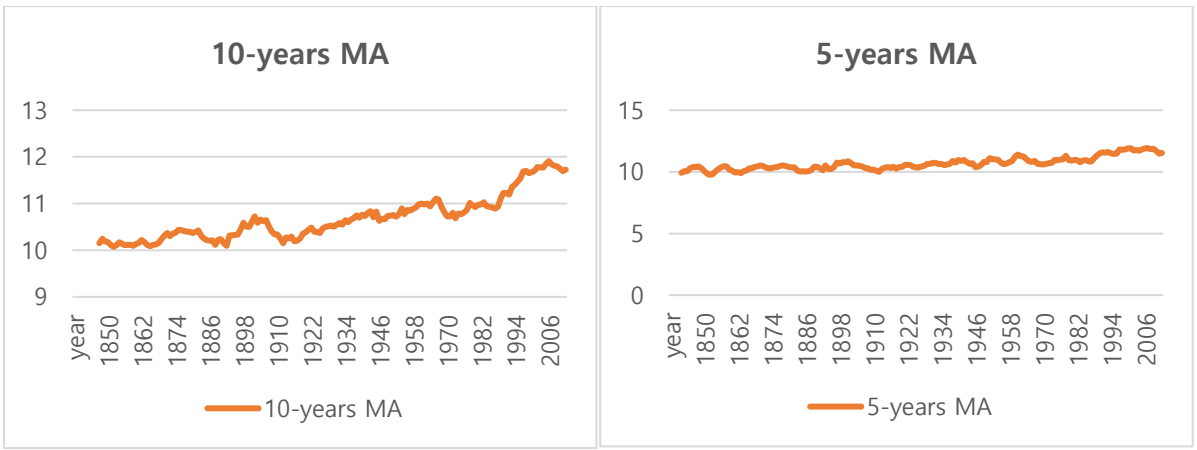


Figure1. Different volatility between 10-year MA and 5-year MA

2) The number of years measured were different between city level data(from 1848 to 2013) and global data(from 1750 to 2015) making hard to compared weather trends. Thus, the graph for comparison was limited to 1848 to 2013. (Figure2)

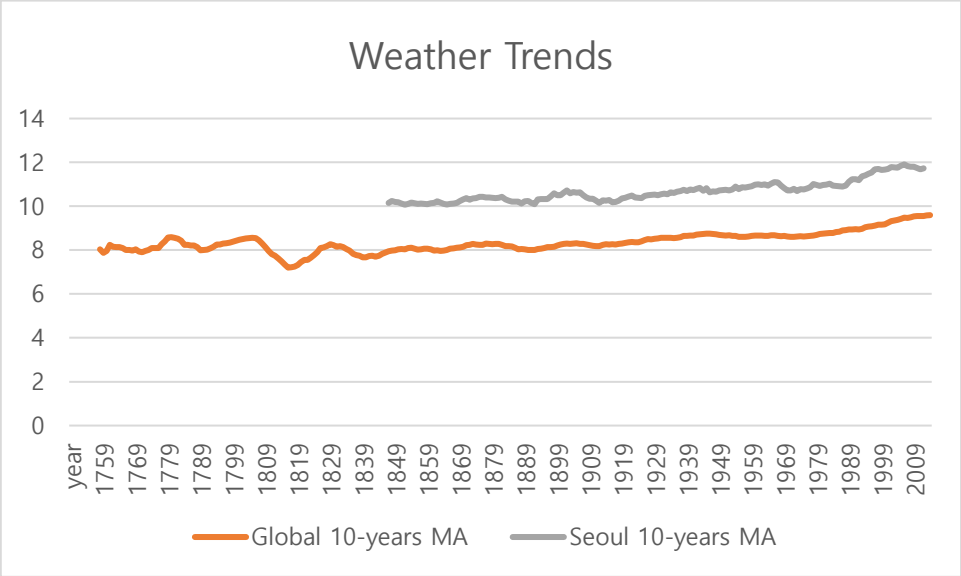
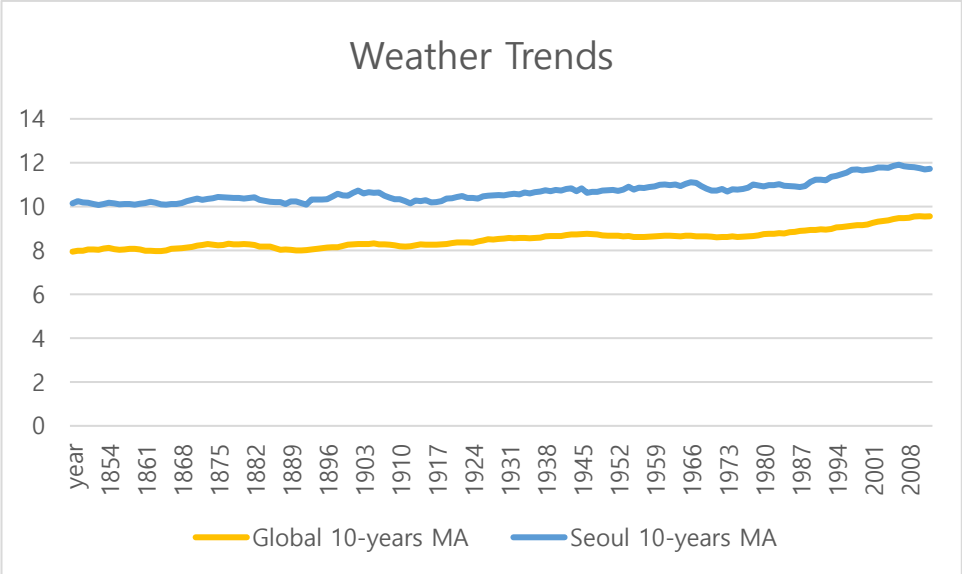


Figure2. Difference in year axis criterion on Global and Seoul

3. Observations



1) The overall average temperature of global and Seoul has increased similarly.

2) However, the average temperature in Seoul is about 2 degrees Celsius higher than the global temperature, indicating that Seoul people are generally living hot.

3) The graph shows that the weather change trend is also generally similar. For example,

graph of 1903 is relatively steep, a phenomenon that occurs simultaneously in both Seoul and global trends. This suggest that average temperature change in Seoul can be inferred through global changes.

4) Although the difference in hardly visible, the gap between Seoul and global average temperature seems to be growing in recent decades. This shows that global climate chares, such as global warming, is more prominent in Seoul.