First of all, I use SQL to query temperature data. The code is:

```
SELECT * FROM city_data WHERE city='Taipei'
```

```
SELECT * FROM global_data
```

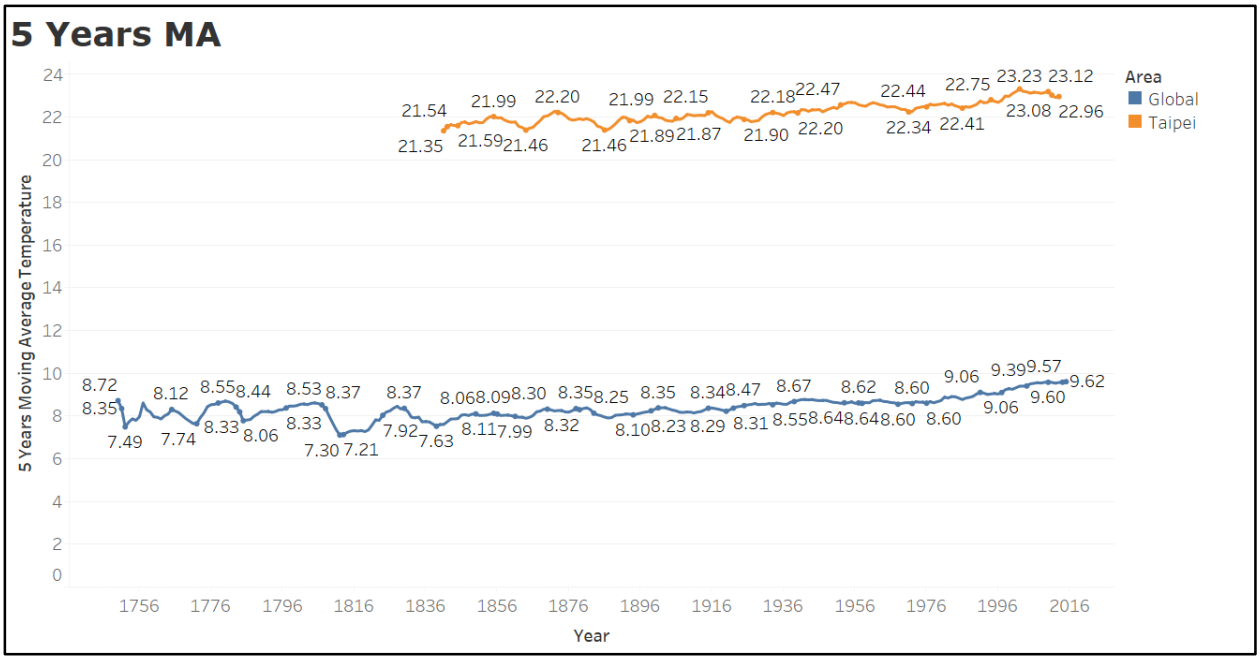
Second, I use Tableau, a famous data visualization software to observe the average temperature trend. A custom calculation is defined in Tableau to calculate 5 and 20 years moving average:

```
WINDOW_AVG(MAX([Sales]),-13,0)
```

Note that MAX function is also used here just because Tableau requires aggregation function to plot this chart. I didn't affect the result. When visualizing the data, since the data I get is average temperature over past decades, usually I will plot a temperature line chart to observe the trend. Furthermore, since I have both global and local temperature data, so I can plot them separately to compare the two. (See figures in the next two pages.)

Here are some interesting observations:

- Generally speaking, Taipei is hotter on average compared to global due to its geographical location.
- In 186 and 1917, both Taipei City and Global suffered dramatically temperature drop.
- In 1998, temperature in Taipei shoot up, but global temperature is sluggish in the meantime. We should consider it as a local event.
- From 20 years moving average's view, both local and global temperature rise.


5 Years MA
5 Years Moving Average Temperature
Year
Area
Global
Taipei
24
22
20
18
16
14
12
10
8
6
4
2
0
1756
1776
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1936
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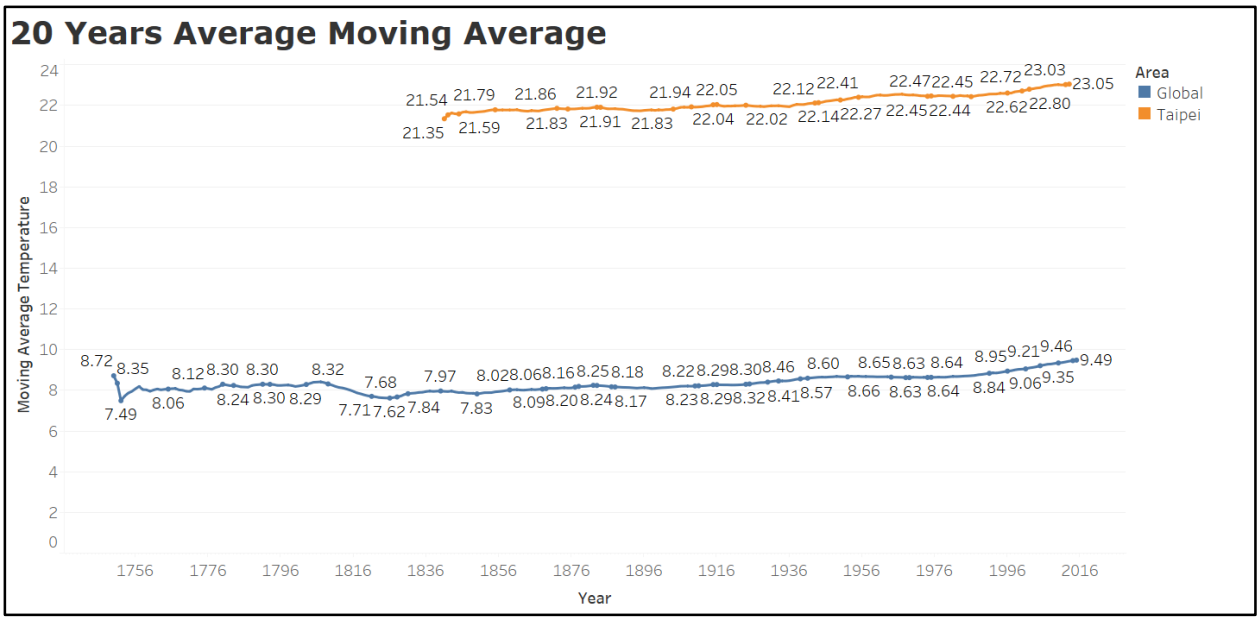
1996
2016
21.54 21.99 22.20 21.99 22.15 22.18 22.47 22.44 22.75 23.23 23.12
21.35 21.59 21.46 21.46 21.89 21.87 21.90 22.20 22.34 22.41 23.08 22.96
8.72 8.35 8.12 8.55 8.44 8.53 8.37 8.37 8.06 8.09 8.30 8.35 8.25 8.35 8.34 8.47 8.67 8.62 8.60 9.06 9.39 9.57 9.62
7.49 7.74 8.33 8.06 8.33 7.30 7.21 7.92 7.63 8.11 7.99 8.32 8.10 8.23 8.29 8.31 8.55 8.64 8.64 8.60 8.60 9.06 9.60


20 Years Average Moving Average
Moving Average Temperature
Year
Area
Global
Taipei
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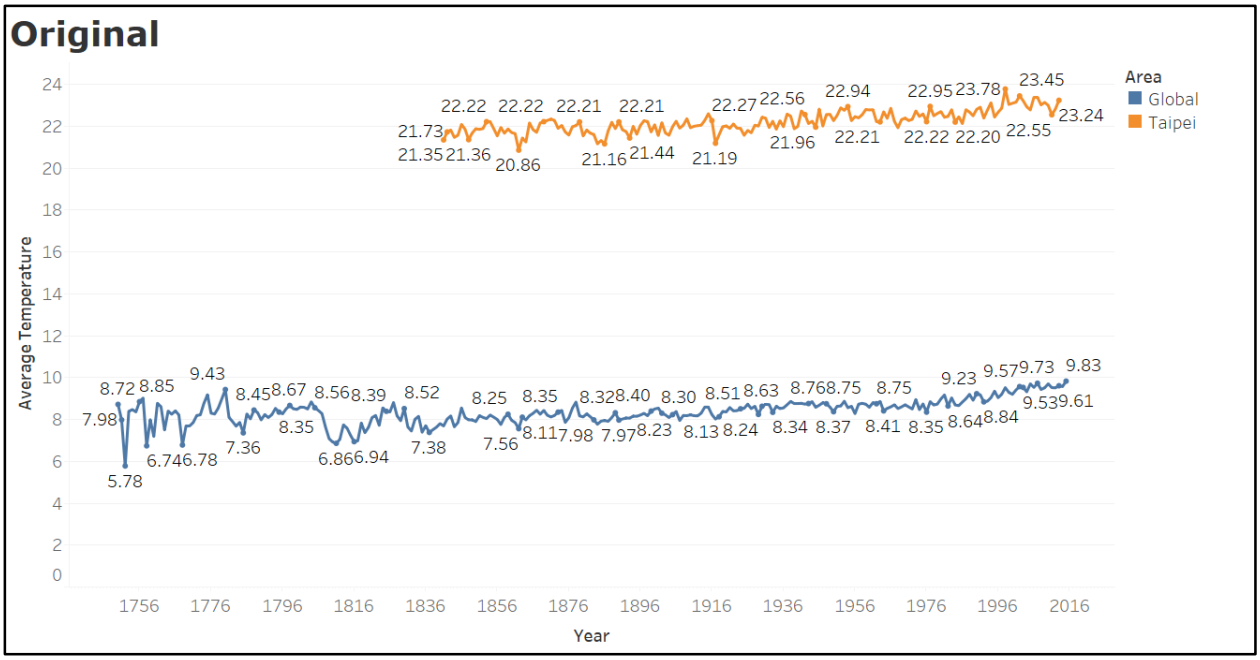
21.54 21.79 21.86 21.92 21.94 22.05 22.12 22.41 22.47 22.45 22.72 23.03 23.05
21.35 21.59 21.83 21.91 21.83 22.04 22.02 22.14 22.27 22.45 22.44 22.62 22.80
8.72 8.35 8.12 8.30 8.30 8.32 7.68 7.97 8.02 8.06 8.16 8.25 8.18 8.22 8.29 8.30 8.46 8.60 8.65 8.63 8.64 8.95 9.21 9.46 9.49
7.49 8.06 8.24 8.30 8.29 7.71 7.62 7.84 7.83 8.09 8.20 8.24 8.17 8.23 8.29 8.32 8.41 8.57 8.66 8.63 8.64 8.84 9.06 9.35


Original
Area
Global
Taipei
Average Temperature
Year
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22.22 22.22 22.21 22.21 22.27 22.56 22.94 22.95 23.78 23.45
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8.72 8.85 9.43 8.45 8.67 8.56 8.39 8.52 8.25 8.35 8.32 8.40 8.30 8.51 8.63 8.76 8.75 8.75 9.23 9.57 9.73 9.83
7.98 5.78 6.74 6.78 7.36 8.35 6.86 6.94 7.38 7.56 8.11 7.98 7.97 8.23 8.13 8.24 8.34 8.37 8.41 8.35 8.64 8.84 9.53 9.61