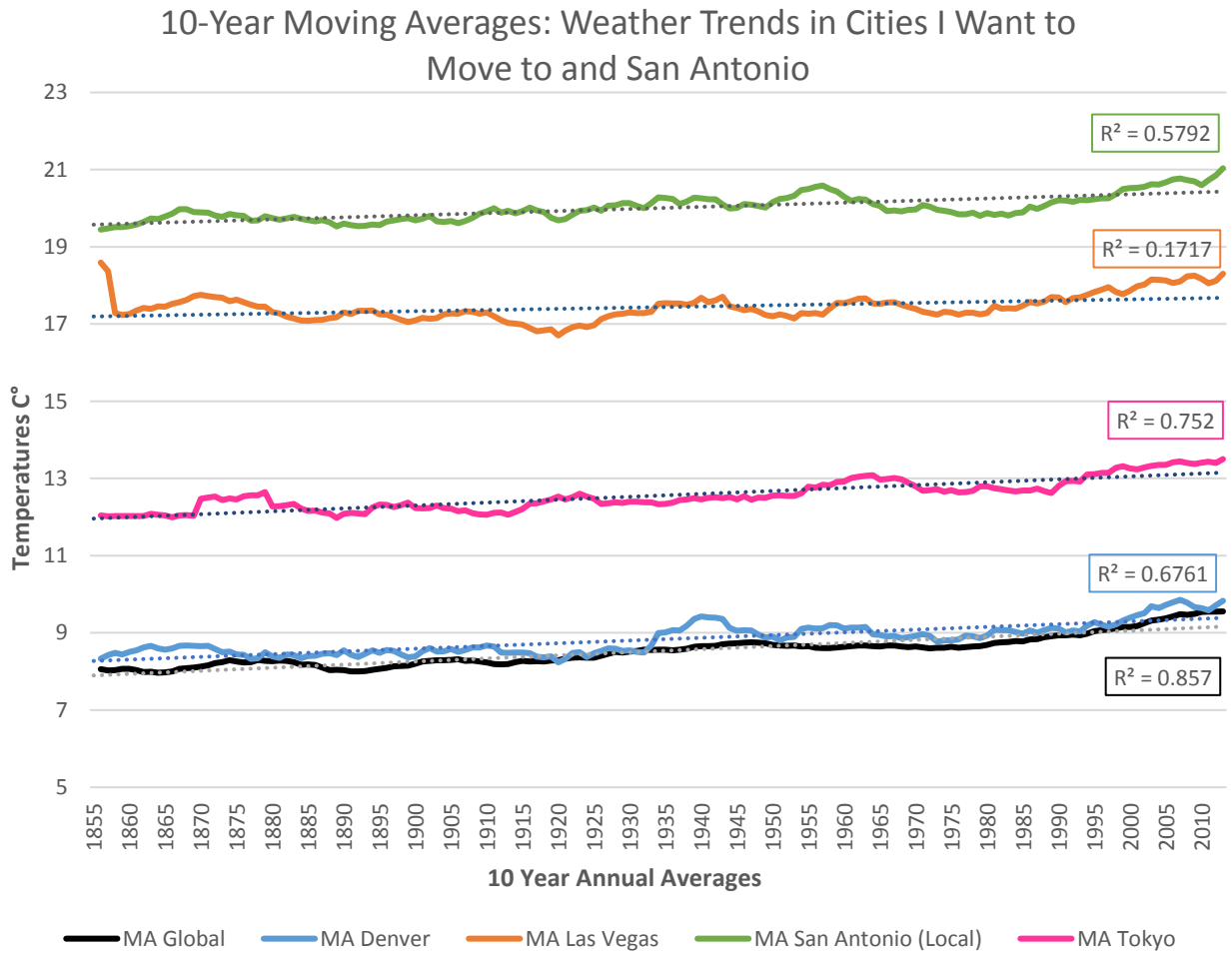
Exploring Weather Trends

- **Outline** of steps taken to prepare the data to be visualized in the chart:
  - SQL and Excel
    - SELECT c.year, c.city, c.avg_temp city_temp, g.avg_temp global_temp
    - FROM city_data c
    - JOIN global_data g
    - ON c.year=g.year
    - WHERE city LIKE 'San Antonio' OR city LIKE 'Denver' OR city LIKE 'Las Vegas' OR city LIKE 'Tokyo'
    - ORDER BY city, year
  - How did you calculate the moving average?
    By 10 Years, calculated in Excel
  - What were your key considerations when deciding how to visualize the trends?
    After creating the moving average lines for each city and the global average, the linear trendline was included to find R^2. I wanted to see how close the data fit the linear regression line to have a better visual of the direction (positive or negative) the average temperature in each city was going towards.

- **Line chart** with local and global temperature trends



- **Line chart**
  - My local city, San Antonio, is consistently and significantly hotter on average compared to the global temperature. Living in San Antonio, the heat is unbearable. So, I included cities I realistically hope to move to in the near future, and Tokyo.
  - The changes in San Antonio's temperatures on average seem to change more than the global temperatures from viewing their trends and the coefficient.
  - Having visited Denver, I was surprised to see how close the global temperature averages it was. I didn't expect the global average to be so low.
  - Seeing Las Vegas's data, a dessert, well below San Antonio's was confirmation of how unbearable San Antonio can be. However, I wonder how this changes and compares over the months/seasons, as I assume Las Vegas may have more extreme temperatures.
  - As I've dreamed Tokyo would be, and by how pleasant the weather was during a trip, it seems to fall perfectly between Denver being too cold and Las Vegas being too hot.
  - Overall, all the trends looks like it's getting hotter and pretty consistently. The only noticeable inconsistency is Las Vegas in the mid 1800's.

Due to the limited recorded data in one or two of the cities I picked, I couldn't look at the larger set of data for the global averages. I made this one below and see R^2 is lower, and the earlier years I omitted from the chart comparisons above seem to be much further from the fitted line than the more recent years I used.