Weather Trend Exploration

This is an exploration of global weather trend compared to two cities: London, UK and Vilnius, Lithuania. Data used - SQL database provided.

Data Preparation

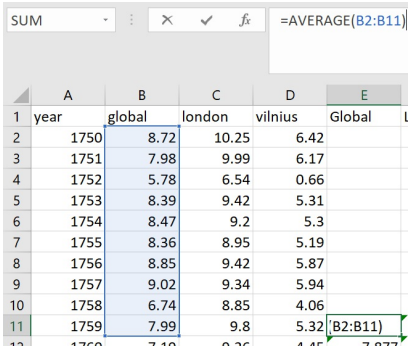
To choose cities I've selected cities from countries I recently lived in and chose closest cities.

```
select *
from city_list as cl
where cl.country in ('United Kingdom', 'Lithuania')
```

I've joined temperature data into one select to skip a step of copying and pasting columns from multiple spreadheets.

```
select
    glb.year,
    glb.avg_temp as global,
    lnd.avg_temp as london,
    vln.avg_temp as vilnius
from global_data as glb
left join city_data as lnd
    on lnd.year = glb.year
    and lnd.city = 'London'
    and lnd.country = 'United Kingdom'
left join city_data as vln
    on vln.year = glb.year
    and vln.city = 'Vilnius'
    and vln.country = 'Lithuania'
order by glb.year
```

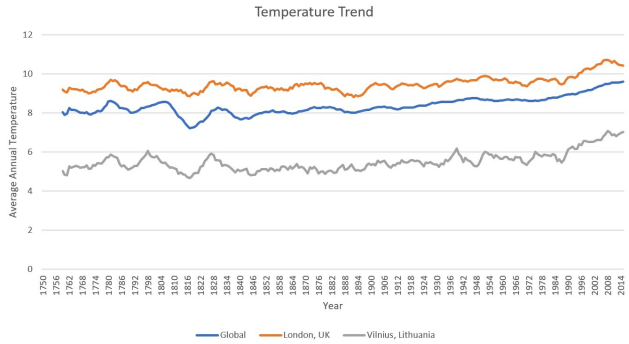
I then downloaded the output of this query as CSV file and added moving average columns for all temperature trend columns. I chose 10 year moving average.



	A	B	C	D	E
1	year	global	london	vilnius	Global
2	1750	8.72	10.25	6.42	
3	1751	7.98	9.99	6.17	
4	1752	5.78	6.54	0.66	
5	1753	8.39	9.42	5.31	
6	1754	8.47	9.2	5.3	
7	1755	8.36	8.95	5.19	
8	1756	8.85	9.42	5.87	
9	1757	9.02	9.34	5.94	
10	1758	6.74	8.85	4.06	
11	1759	7.99	9.8	5.32	

Data Visualization

I used Excel to generate line chart from 10 year moving averages of global temperature along with local London and Vilnius temperatures.



Observations

- Local London temperature tends to me higher compared to global average, while Vilnius tends to be lower;
- Local trends of both cities correlate with global trend;
- Global trend is less volatile than local ones;
- Overal trend shows that temperatures are gradualy rising.