



The correlation between GDP and Life Expectancy

Chile, China, Germany, Mexico, USA, Zimbabwe
Over period of 2000 - 2015

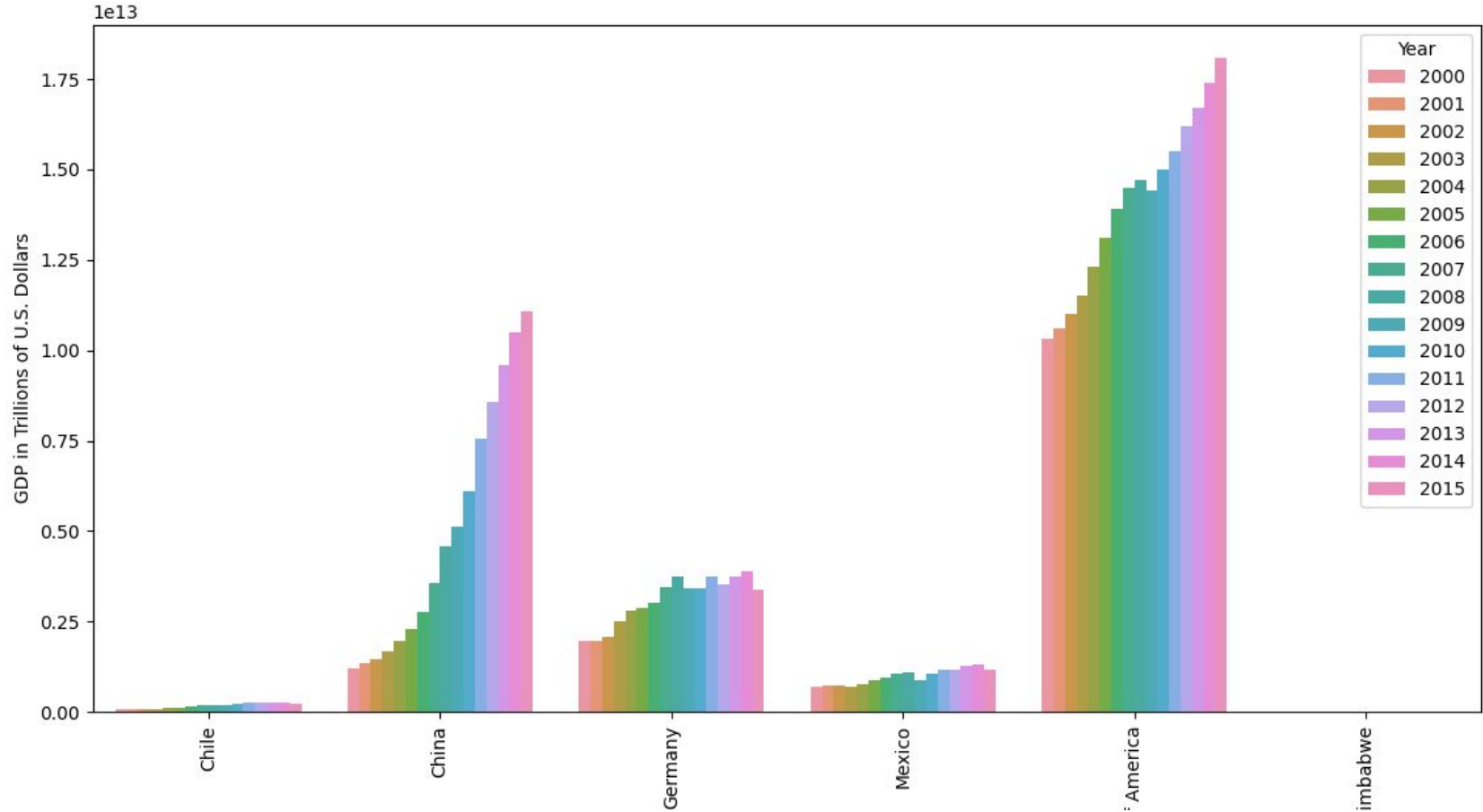
GDP Source: [World Bank](#) national accounts data, and OECD National Accounts data files.

Life expectancy Data Source: [World Health Organization](#)

Key questions:

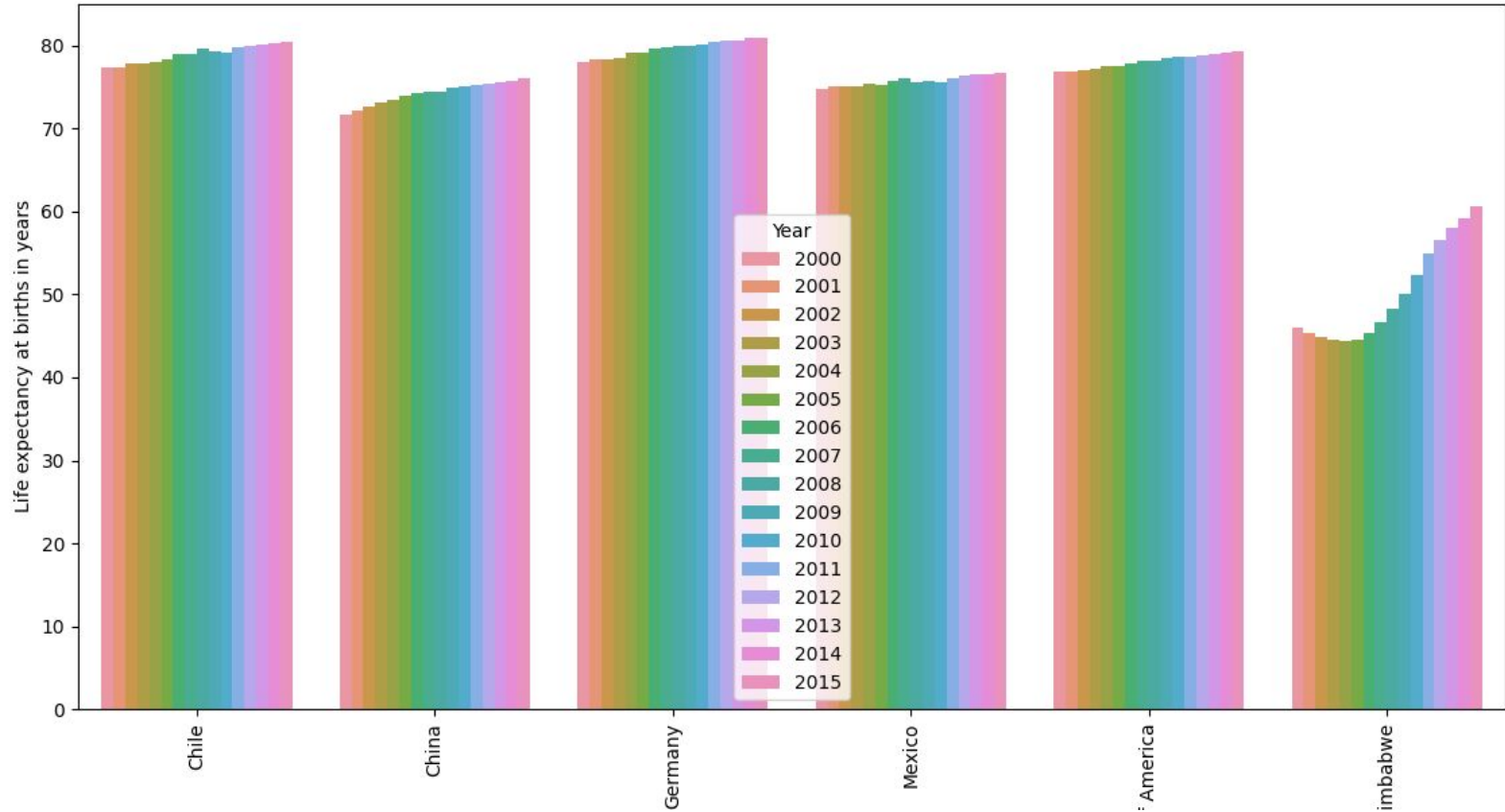
- Has life expectancy increased over time in the six nations?
- Has GDP increased over time in the six nations?
- Is there a correlation between GDP and life expectancy of a country?
- What is the average life expectancy in these nations?
- What is the distribution of that life expectancy?

G1. GDP growth of 6 countries from 2000 - 2015



- Overall, GDP of these countries steadily increased over the 15 year period.
- China's GDP exponentially increased. China's GDP in 2015 is 9.13 times higher than 2000's while for USA it is only 1.76 times.
- There was a drop in GDP in 2015 in Chile, Germany and Mexico while both USA and China were constantly growing.
- Zimbabwe's GDP was nowhere on the chart.

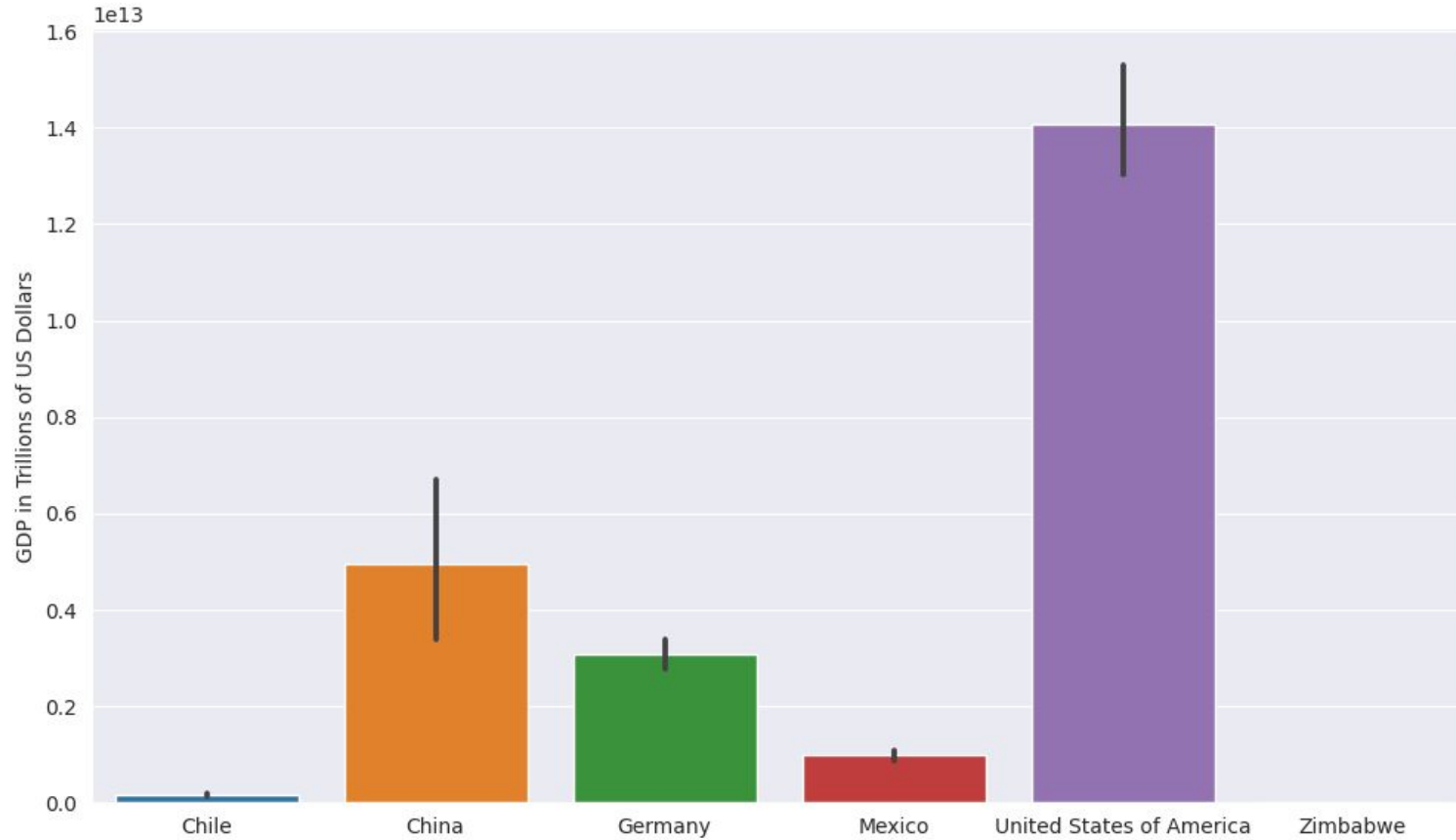
G2. LEABY of 6 countries from 2000 -2015



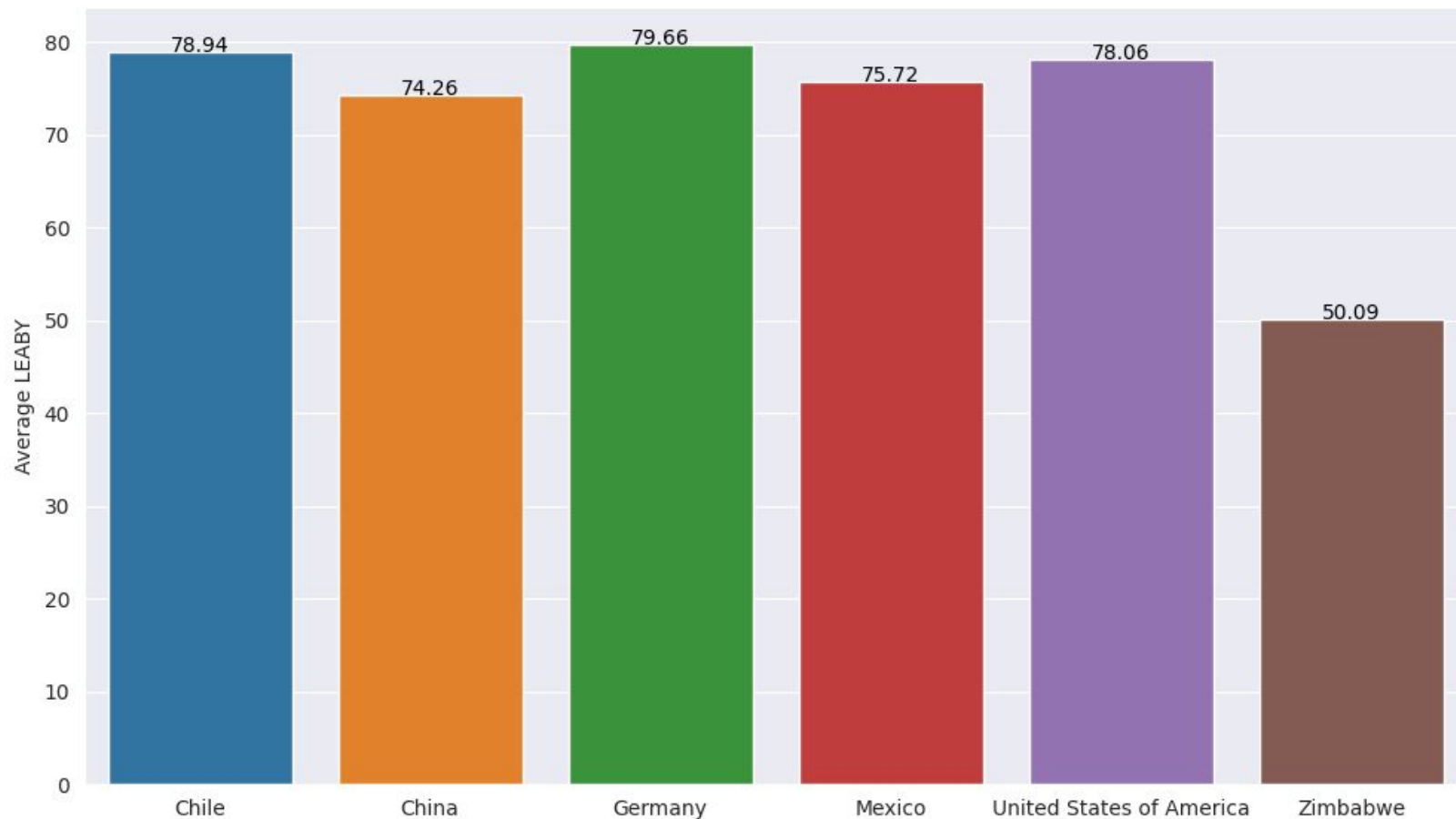
- Life expectancy of all 6 countries gradually increased during 15 years.
- Zimbabwe experienced the biggest jump from 44.3 yrs old (2000) to 60.7 yrs old (2015) whereas there's not much difference for the rest 5 nations.
- Germany and Chile surpassed USA.

Next we will see the average GDP and LEABY of each country during 2000 - 2015 and how they correlate.

G3. Average GDP over the period



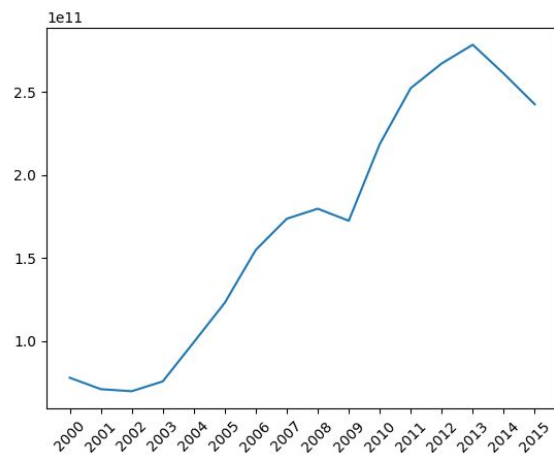
G4. Average life expectancy of each country



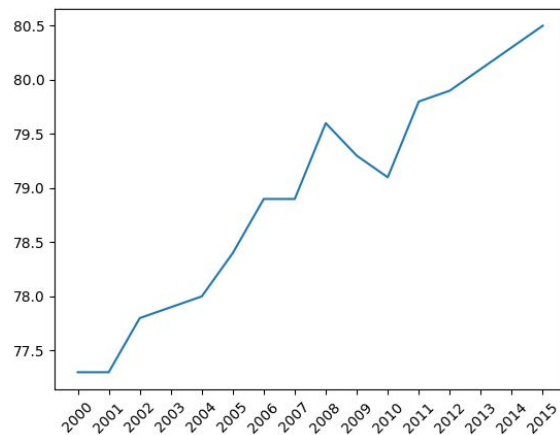
- Zimbabwe unsurprisingly with the lowest GDP among 6 nations has the lowest Life expectancy of its citizens.
- USA having the highest GDP leaving the rest far behind has LEABY among top 3.
- In general there is no clear correlation between GDP and LEABY particularly for Chile, China, Germany and Mexico to be drawn from these 2 charts. Hence further deep dive to each country above would be essential to observe the changes of their GDP and LEABY throughout the years.

Chile

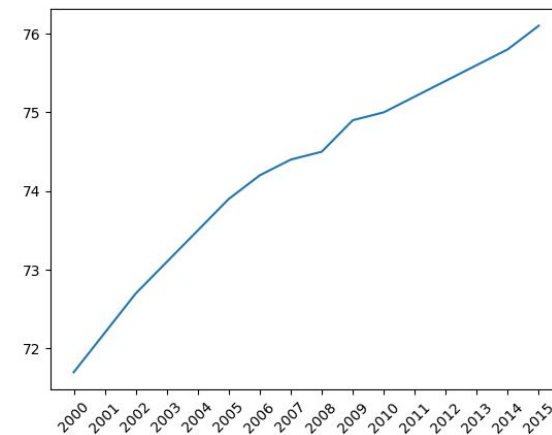
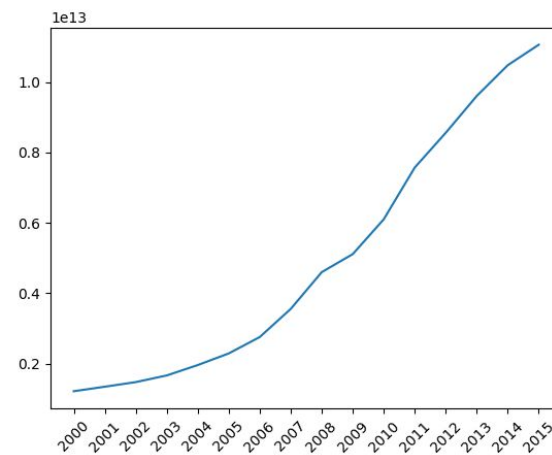
GDP in U.S.
Dollars



Life expectancy at
births in years

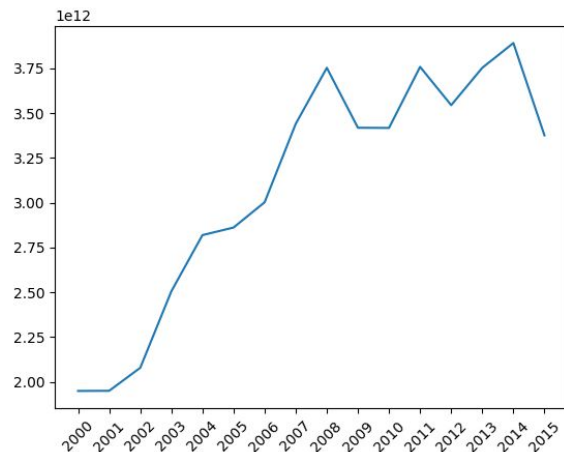


China

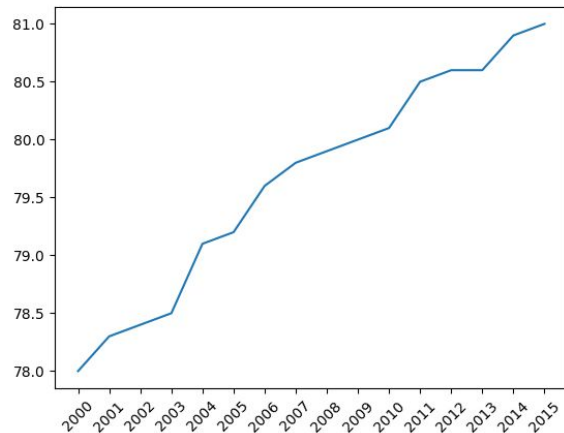


Germany

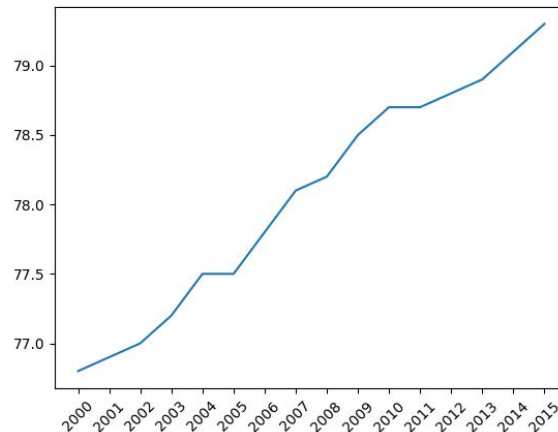
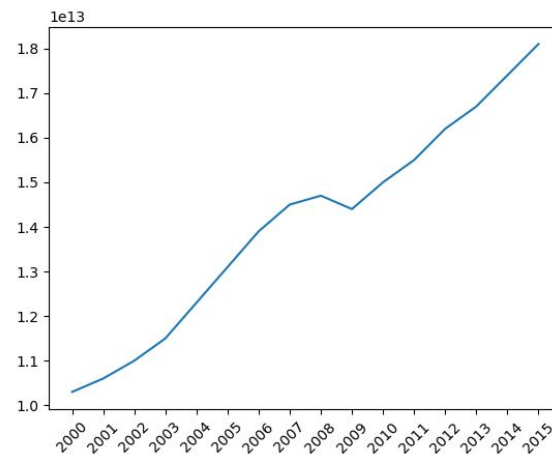
GDP in U.S.
Dollars



Life expectancy at
births in years

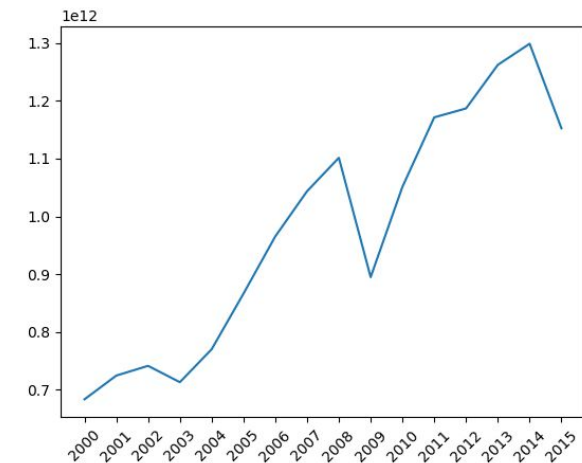


USA

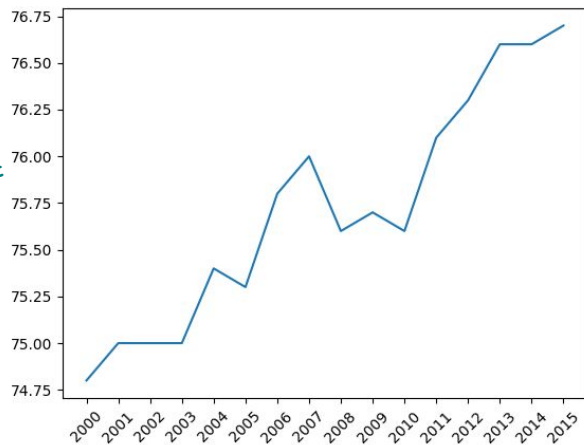


Mexico

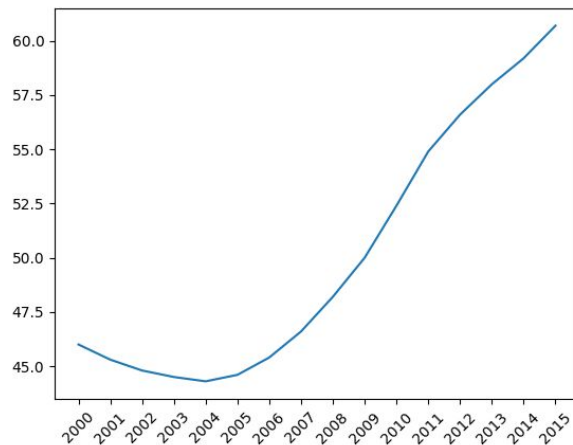
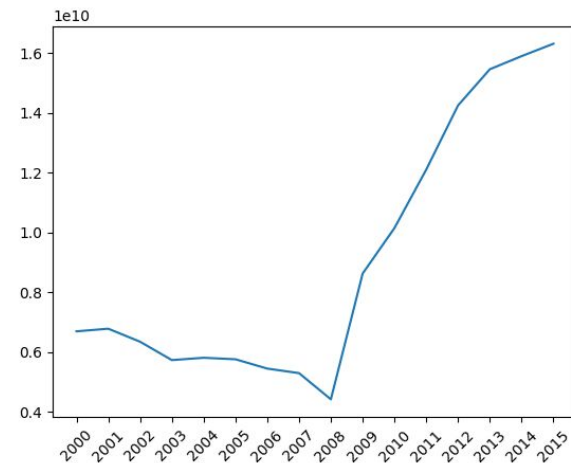
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Life expectancy at
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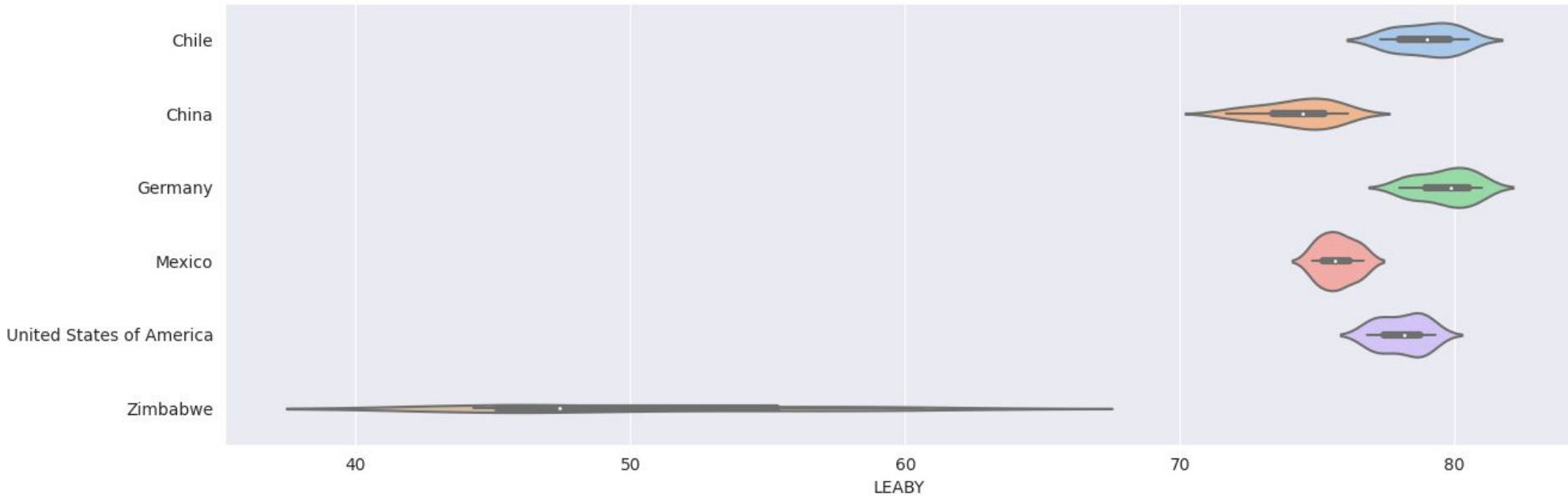


Zimbabwe



- During the last year 2014-2015, Chile, Germany and Mexico (countries on left columns) are those countries whose GDP and LEABY were positively correlated while the rest had negative correlation.
- Chilean and Mexican LEABY values fluctuated although both experienced increasing age throughout the years.
- China graphs show the consistency of growth for both GDP and LEABY.

G5. Distribution of LEABY on violinplot



- Zimbabwe experienced the highest jump in LEABY, which no doubt is a result of an exponential increase in GDP growth. Its median falls around 47.4 yrs old, which is pretty low compared to USA (78.15 yrs old), Germany (79.85 yrs old), China (74.45 yrs old), Chile (79 yrs old) and Mexico (75.65 yrs old)
- Zimbabwe also observed the widest range of interquartile compared to the rest.

Conclusion:

- Has life expectancy increased over time in the six nations? **YES**
- Has GDP increased over time in the six nations? **YES**
- Is there a correlation between GDP and life expectancy of a country?
YES, but further research to prove the influence of GDP on LEABY will be necessary. From my opinion, GDP/capital would be a more accurate variable to evaluate in this case.
- What is the average life expectancy in these nations? **See G4.**
- What is the distribution of that life expectancy? **See G5.**