



Climate Change Data Analysis Based on World Bank Data

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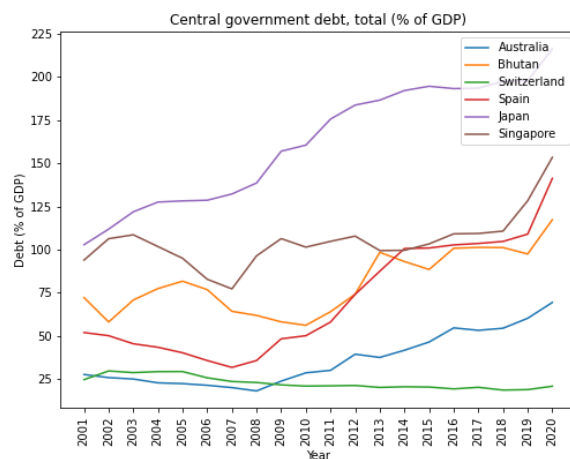
GitHub Repository: <https://github.com/rl22aas/DS-Assignment-2.git>

Abstract:

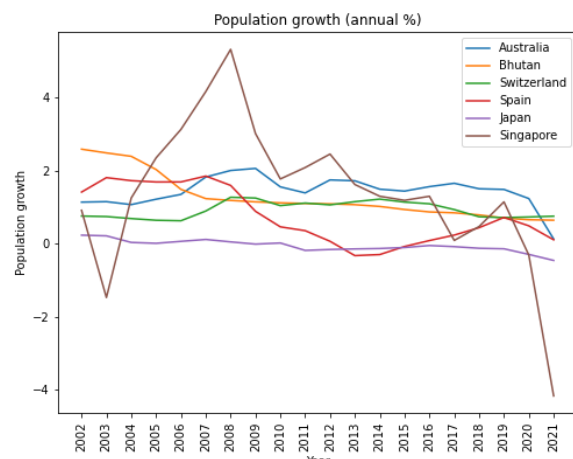
The objective of this report is to present an analysis of environmental change and anthropogenic climate change, drawing on data from the World Bank. The report focuses primarily on the impact of population growth (% by year) and rural population on various indicators worldwide. I have also compared the population data with the government's debts. To support the research and findings, Python and its data analysis libraries were utilised.

Climate change refers to the long-term alteration of global weather patterns and temperatures, primarily resulting from human activities, such as burning fossil fuels and deforestation. The rise in temperature caused by greenhouse gases emitted by human activity has significant impacts on the planet, including rising sea levels, more frequent and intense natural disasters, and changes in precipitation patterns. To analyse the change in climate, I have prepared a report by using the data provided by the World bank. I have used a group of countries to compare their data in order to keep the plots readable.

I have compared the data for central government debt by the total percentage of GDP of the country.



of the death rate or some other indicator.

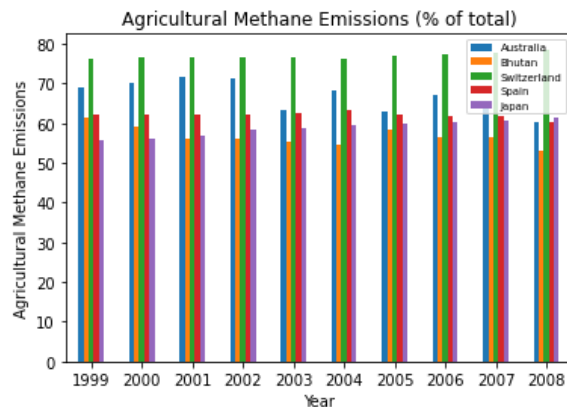


We can see that in most of the countries, debts are displaying an upward trend and it is not peculiar. I have compared this data with the population growth in countries. Before starting the comparison, I was thinking that these indicators will display a directly proportional relation but it displayed totally different results.

In the following population growth image, we can see that most of the countries are showing a downward trend in population growth. It may be because

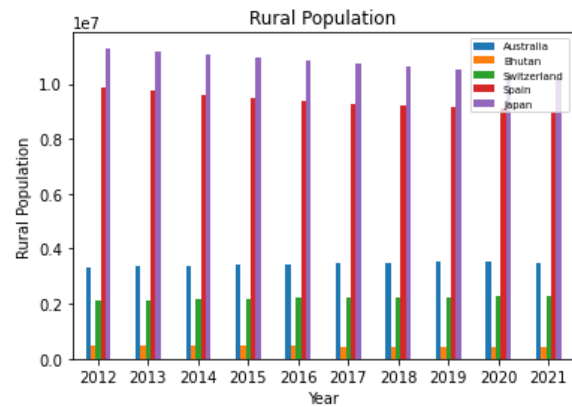
Singapore is displaying an extremely low trend for population growth but at the same time, it displays an upward trend in the debt graph. Switzerland is displaying an upward trend in population growth but its trend in central government debt (total % of GDP) is representing the downward trend.

I have also studied and compared the agricultural methane gas emission in different countries. I got the data from the World Bank website to study and make comparisons of Methane gas emission in a group of countries.



To make comparison, I have selected a random group of countries and compared their data for methane gas emission. We can see that Switzerland is on the top of the graph and displaying an upward trend in the coming years. The country Bhutan is at last in the comparison of emission of Methane gas and showing a downward trend in the coming years. The country Australia is in the second position in the emission of agricultural methane gas.

To study the factors behind the rise in agricultural methane gas, I downloaded the data for the rural population from the World Bank website.



The modernization of the world has enormous effects on lifestyle. It has changed the way we live and the way we think. Most of the people have moved to the town from countryside areas (rural areas). In the preceding graph, we have compared the rural population data in different countries. We can see that the overall trend of data is downward and the rural population is being decreased by the years. Japan has most of its population in rural areas. We can summarise the effect of rural population on the agricultural methane gas emission by comparing these graphs. We can deduce that the countries with more rural populations have relatively less agricultural methane gas emission.