# Why did Zimbabwe's Life Expectancy decrease after the millennium change?

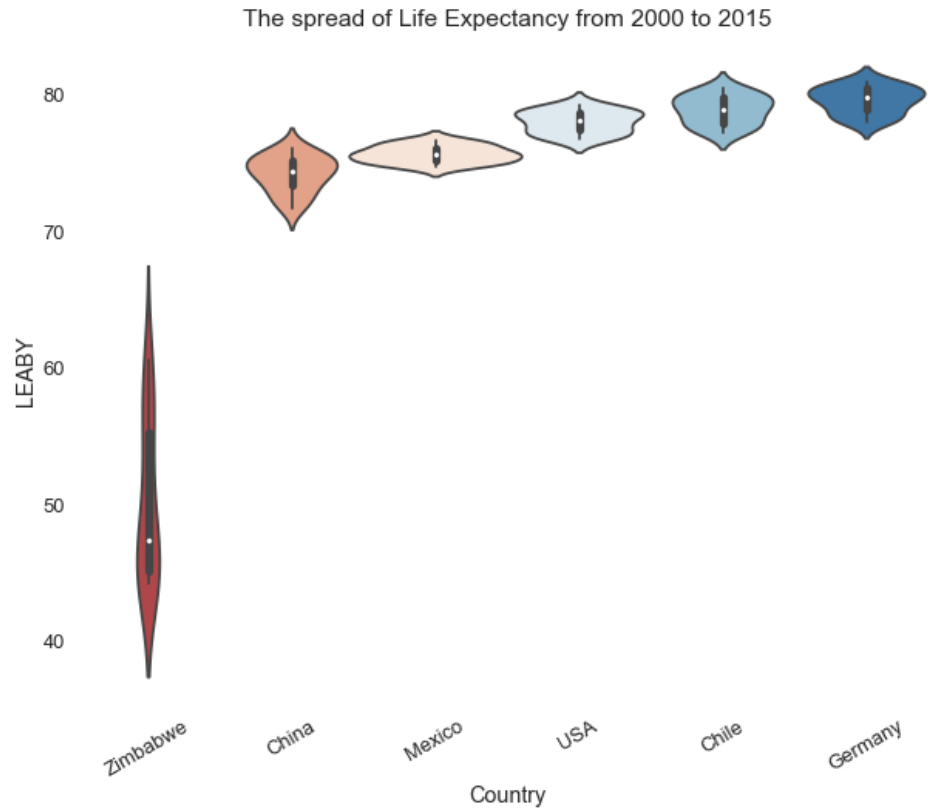
**We are getting older and older. One of the bigger influences is a significant decrease in child mortality[1]. This has been a trend for the last millennia. However, it is worth zooming in and out to find eras where this trend does not apply – Obviously, the sole fact that we are getting further in time is no influencer on itself to our life expectancy growing.**

Analysis on a dataset of the World Health Organization (WHO) and the World Bank provides insides in the life expectancy at birth (LEABY) of six different countries around the world and its corresponding Gross Domestic Product (GDP – Total value of goods produced and services provided in a country during one year). From this data, I aim to provide insights in the relation between GDP and LEABY and their evolution over the years 2000 to 2015.

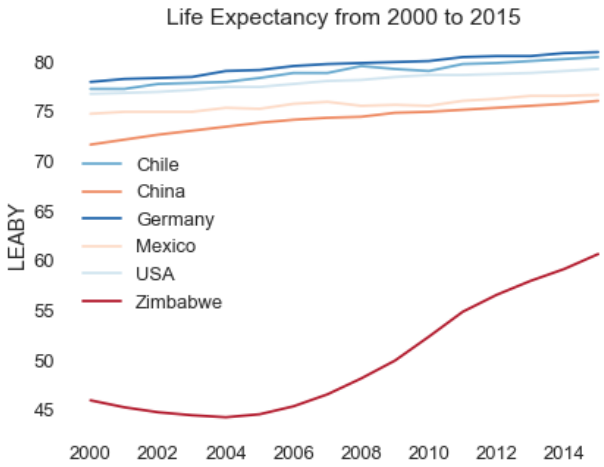
From this, I found that in the years 2000-2004 Zimbabwe shows a LEABY and GDP that is not in line with the general trend worldwide. By digging into the country's history we find likely causes for this off-trend: War. Also, we find a temporary negative relation between GDP and LEABY in this time period which could be caused by the instant change in the biggest influencer of a relatively low LEABY, the war, and the lagged response of the economic relief following the war.

**People live longer lives**

Assuming the trend of continuous growth in LEABY continues we can see in figure 1 that Zimbabwe has experienced a spectacular growth in life expectancy. Why is this growth faster than that of the other countries in the dataset?




[1] https://ourworldindata.org/child-mortality





**Was this growth constant?**

Let's look at the actual life expectancy development of the countries over the 2000 to 2015 timeframe, so taking into account the corresponding year, in figure 2. Although all countries have increasing LEABY, Zimbabwe's line is decreasing in the years following the Millennium change.

After the dip in 2004 at a LEABY of 44.3 year, Zimbabwe's shows a pull towards the dataset's average which could indicate a regression to the mean but many factors that are inherent to Zimbabwe cause it to not fully get there.

Another interesting observation is the optical steadiness of the growth of the other countries where I would personally expect a decreasingly growing LEABY. With my limited medical insights I don't think its valuable to waste our time to explain my earlier expectation.

Taking advantage of the readily available data from the WHO and the World Bank we can hold these graphs against the GDP of these countries. A growth in GDP could mean that people have more to spend and are more capable to get access to medicine.

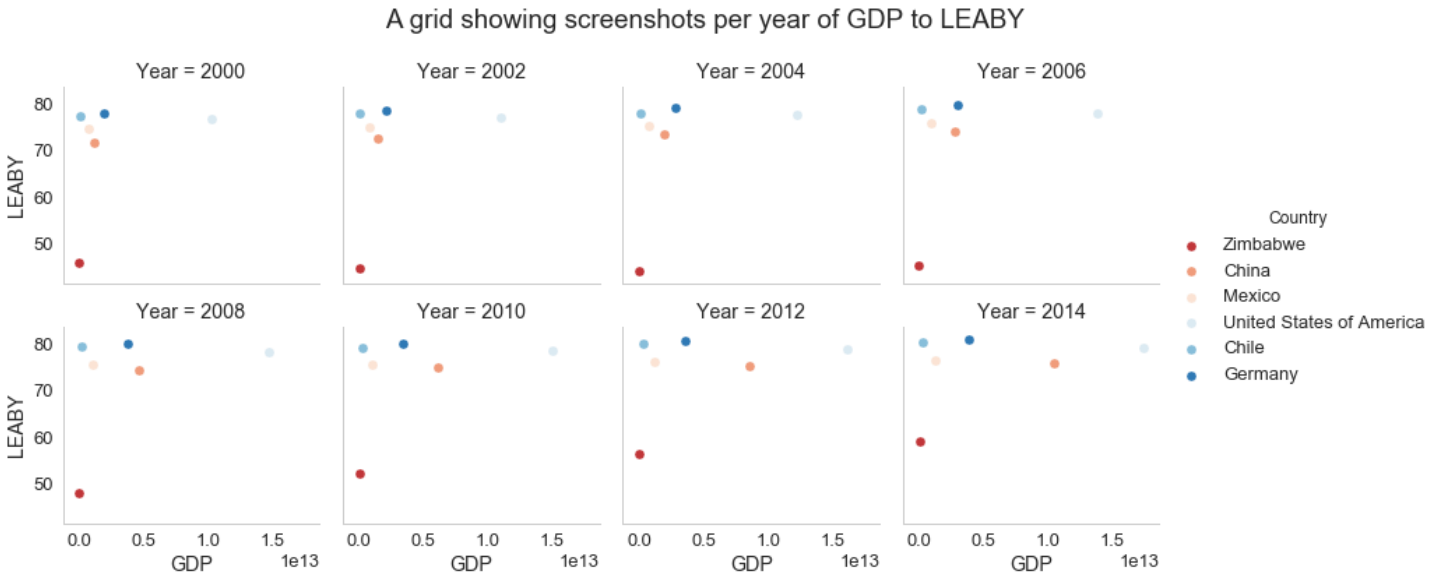
When we look at the GDP of each country, we see a similar pattern for the countries. This could be understood: A higher GDP leads to a higher LEABY and vice versa. Higher LEABY leads to longer lives which leads to a bigger workforce, which leads to a higher GDP.

However, Zimbabwe's GDP gets lost by the relative giants in the dataset. This is caused by the economic success of each countries and its population size. There are 85 times more people living in China compared to China but is similar in size to Chile, the second smallest country population wise in the dataset.

Growth of GDP could also be a lagged response to an increase in births almost two decades ago and these kids now turning up in the labor market. Also, improved health care could lead to more people staying on the labor market for a longer time. So some reversed causality could be in play. A data research on this lagged response could give more insights on the interrelationships between LEABY and GDP.

World Health Organization

THE WORLD BANK




The grid shows the movement of each country in the dataset of GDP to LEABY. When assuming a positive relationship between the two without a lag we would expect a movement to either the top-right and bottom-left. Zimbabwe's dot seems to only be moving up, while the other countries seem to be mostly moving right, why so?

**Zimbabwe after the Millennium Change**

In the years surrounding the change to the 21st century, the world had witnessed its most deathly conflict since the Second World War: The Second Congo War (also known as the Great War of Africa).

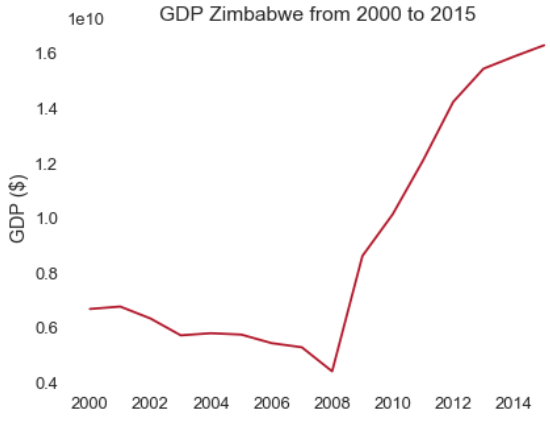
Logically taking into account the effect that a war has on these variables: more non-natural deaths and inefficient allocation of monetary funds.

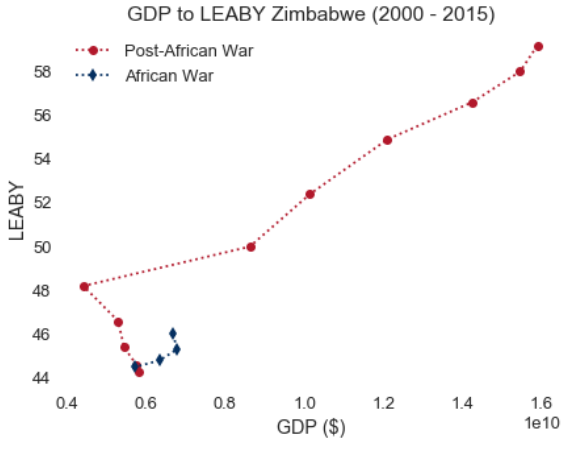
When we look at data we see a downward trend in the years after the millennium change all the way to 2008. While the African War ended in 2003, economic growth stalled until 2008.

But although GDP had a lagged response, life expectancy in Zimbabwe grew right at the moment the war officially ended. After the war, Zimbabwe had the ability to grow at a faster rate than the other countries in the dataset. Which could be a delayed access to medicines.

**Conclusion**

War has a direct influence on both life expectancy and GDP, but the effect on GDP seems to have a delayed negative effect. After a war LEABY grows faster for affected countries – a regression to the mean.



**Limitations**

This article shows how I can use an ability to make cut-corner conclusions about different relationships based on very limited data. Although some conclusions drawn within the article might be correct and there is some causality to back it up, there are major limitations to the data used to justify such conclusions.

One of the limitations is that GDP per capita is a much better estimate of a country's wealth than just GDP as it controls for population size.

Also, having population size itself in the dataset would be a valuable addition for making the article more anecdotal and better to read.

Besides the type of variable, there is another major limitation to the data set: number of observations. In order to conclude that this is the effect that the War has on countries we should be taking into account:

- More countries affected by this specific war
- Countries similar to the affected countries, but were unaffected by the war
- All other countries
- More observations by looking at other wars.
- Other influencers of LEABY, such as accessibility to health care.