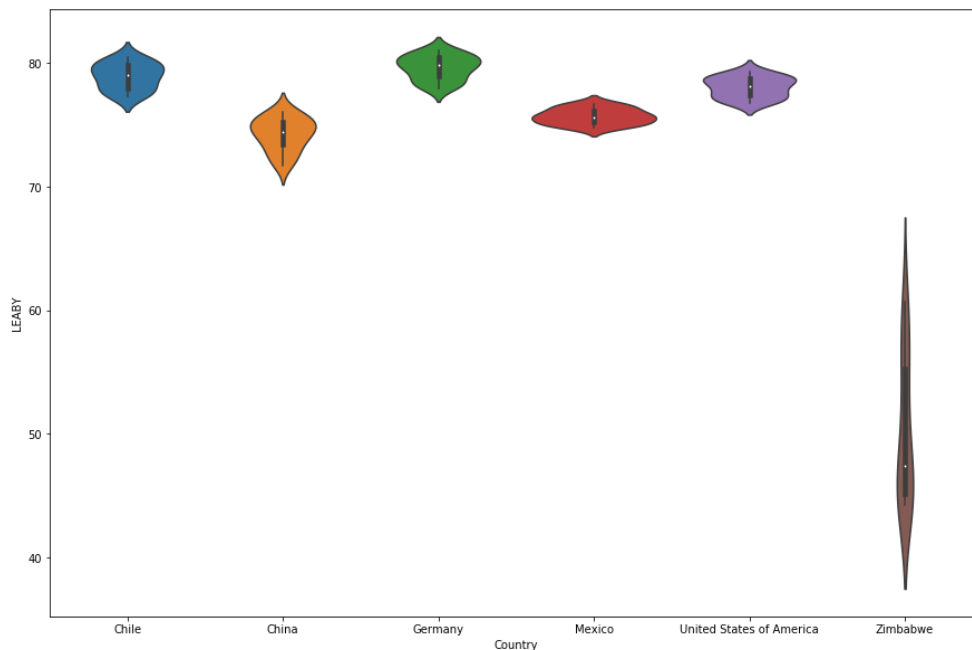


Tracking the Benefits: Trends between GDP and Life Expectancy

By Clara Zou



CodeAcademy Graphic 1 | A violin plot of the life expectancy distribution according to country.

Data visualizations make information digestible. With large collections of data, research can take a position on trends and make recommendations for institutions such as the government. Take GDP and life expectancy across various countries. The drawn conclusions and following content is a convincing argument for development countries to invest in health institutions (i.e. hospitals, healthcare, and welfare programs).

GDP and Life Expectancy

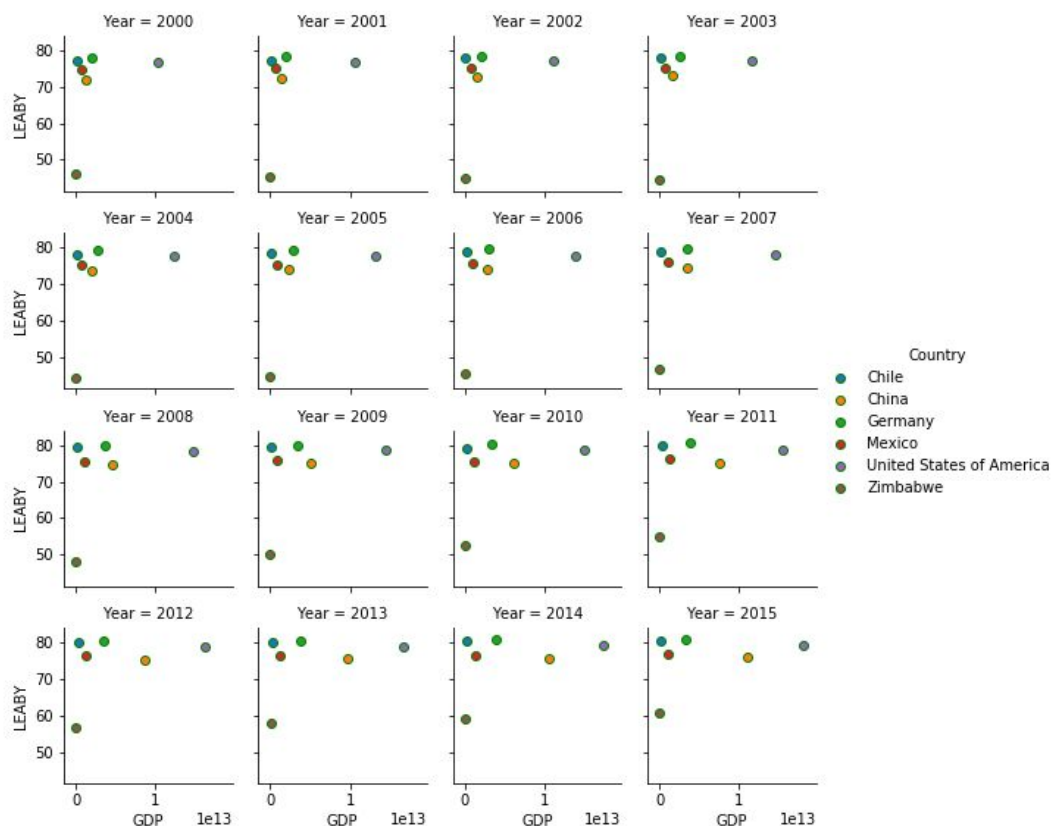
GDP (Gross Domestic Product) is an universal measure for comparing economic health across countries. Life expectancy at birth year (LEABY) is an indicator for health status of a national population. It can change due to fluctuations in living standards, education, or healthcare services. [Source: OECD Data] Countries that range across the development spectrum will see a higher level of life expectancy and GDP when they are more developed. A higher level of development can be recognized as better healthcare for instance or status as a “World Power”. The United States is a World Power. Meanwhile, China is recognized as a rising world power with a powerful grip on trade and international markets. Germany is a world power

as well; they are a member of the European Union who represents a strong economy that holds stability that developing countries lack.

Countries Across the Range

Countries that are further developed and maintain more stable economies will have higher life expectancy at birth. Described in Graphic 1, there is a visible difference between Zimbabwe and further developed countries. While Chile and Mexico are not recognized as economic hegemonies, they do belong to a trade bloc (MERCOSUR). One of the benefits of membership to a trade group is a steady economy.

Another conclusion based on Graphic 1 is the obvious difference between the 95% confidence intervals across the six countries (the black line stretching vertically across the shape). Zimbabwe's 95% confidence interval is over 4x as long as the others. It's a testament to an unsteady healthcare system and uneven infrastructure. There is so much variation that the the majority of the population experiences anywhere from 44 to 60 years life expectancy for a newborn. The wide range that does not offer consistency.

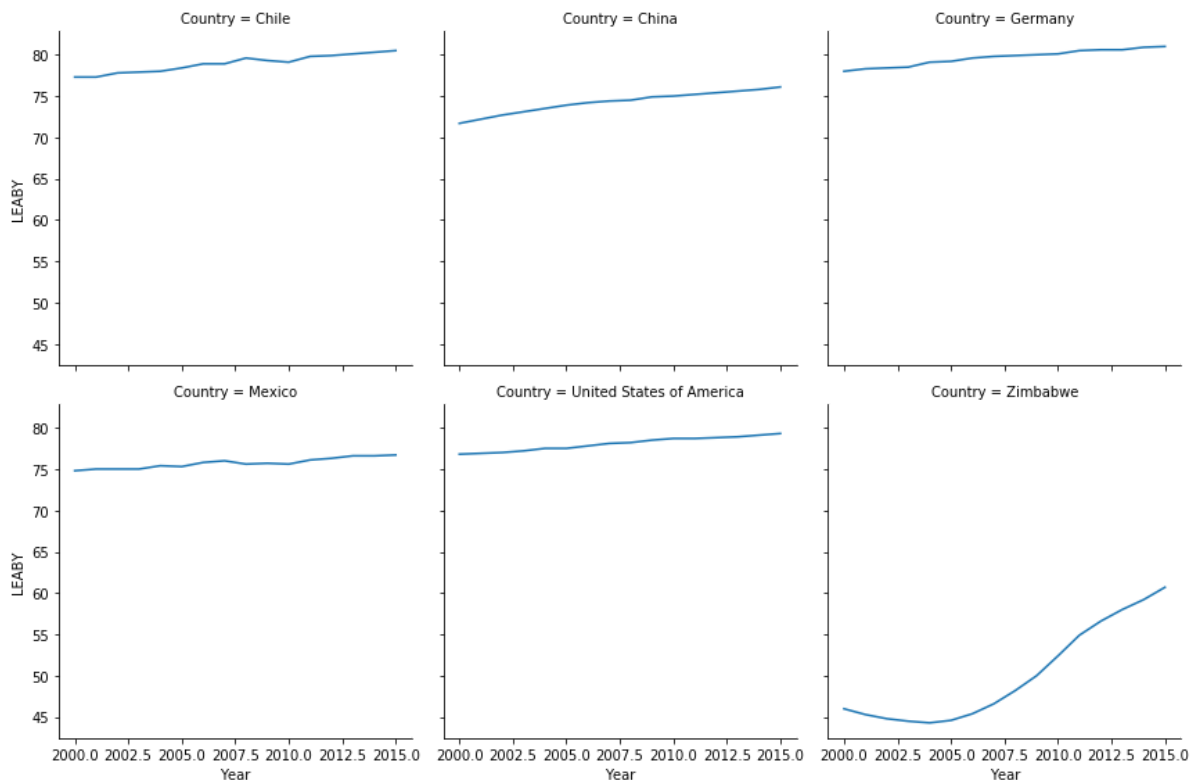


CodeAcademy Graphic 2 | Scatter graphs mapping GDP as a function Life Expectancy by country.

Connections

Meditate over Graphic 2. The graphic shows the life expectancy across time. Zimbabwe consistently remains at the bottom of the pack. In the first decade, there is a lack of progress. With time and foreign investment in infrastructure, the life expectancy has risen and the gap has diminished. There are several reasons behind this difficult gap between the more developed countries and Zimbabwe. A history of Western countries exploiting African nations is a common reason for the low living standards. Zimbabwe is not an exception. An unsteady economy is a result of resource exploitation and Western nations have sucked the capital out of the country, rather than funneling it into developing the country. Recently, Western countries and international organization have made pledges and commitments to raising living standards for countries such as Zimbabwe. As a result, the life expectancy has begun a slow rise and the gap has shrunk.

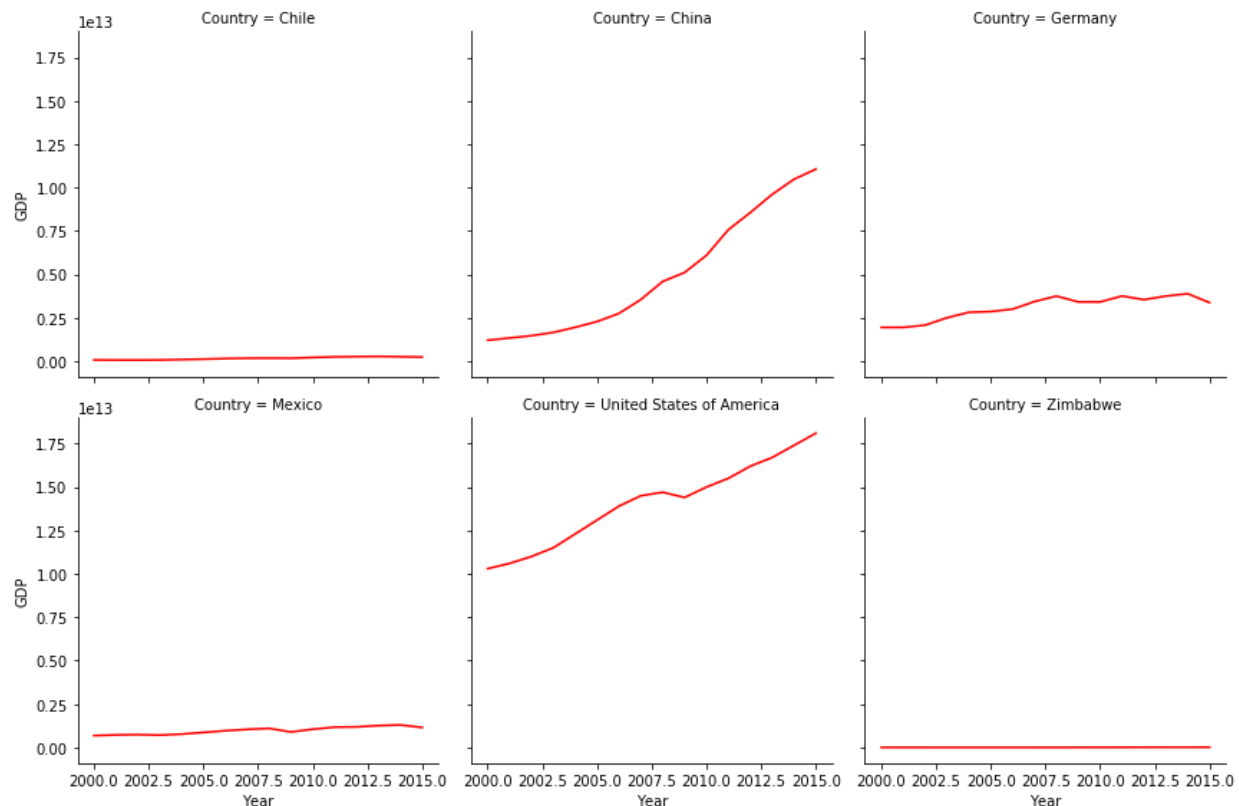
With Graphic 4, it assumed that life expectancy is rising due to external influences (i.e. IMF and non-profits). The GDP is not rising and leads the conclusion away from any local developments being responsible for a higher LEABY.



CodeAcademy Graphic 3 | Facet grid of line graphs mapping Life Expectancy by country.

Graphic 3 visualizes each country's personal trend for life expectancy. China is among the more telling graphs. Officially, China is a developing country and a population numbering

over 1.3 billion people. The national living standard is lower compared to Germany, a country with a small population and well-supported infrastructure. Due to a strong, economic foothold, China has been growing its economy and the welfare of its citizens. As shown by the graphic, the Asian world power is on a steady rise for higher life expectancy rates and it will only continue to rise with its growing presence on the global market (rising GDP as pictured in Graphic 4). With GDP only looking to grow, the Chinese life expectancy will rise to the level of the US, Germany, and Chile.



CodeAcademy Graphic 4 | Facet grid of line graphs mapping GDP by country.

Chile and Mexico demonstrate a correlation between the GDP and life expectancy rates. GDP remains steady across the decade and their LEABY rates remain unwavering as well. Meanwhile, there is a visible change in China's GDP that explains the steady improvement in LEABY. Since they are already a world hegemony, it is no surprise that the United States has rising GDP (a slight visible dip when the Great Recession hit in 2008) and the life expectancy rate remains steady. The American economy and culture is already fairly developed. A rise in GDP will not improve a life expectancy rate that is already at the top of global rankings.

These are a few conclusions based on the collected data. In hopes of sparking curiosity, it is encouraged to continue studying economic events that affected countries and their GDP. In addition, deeper study will show relationships between countries. These can vary from trade

agreements to groups (i.e. NAFTA, European Union, ASEAN, etc.). It is crucial to remember that there is no singular explanation for why life expectancy follows the displayed trend. GDP is only one factor. There are many more and they all offer fascinating angles for the curious mind.