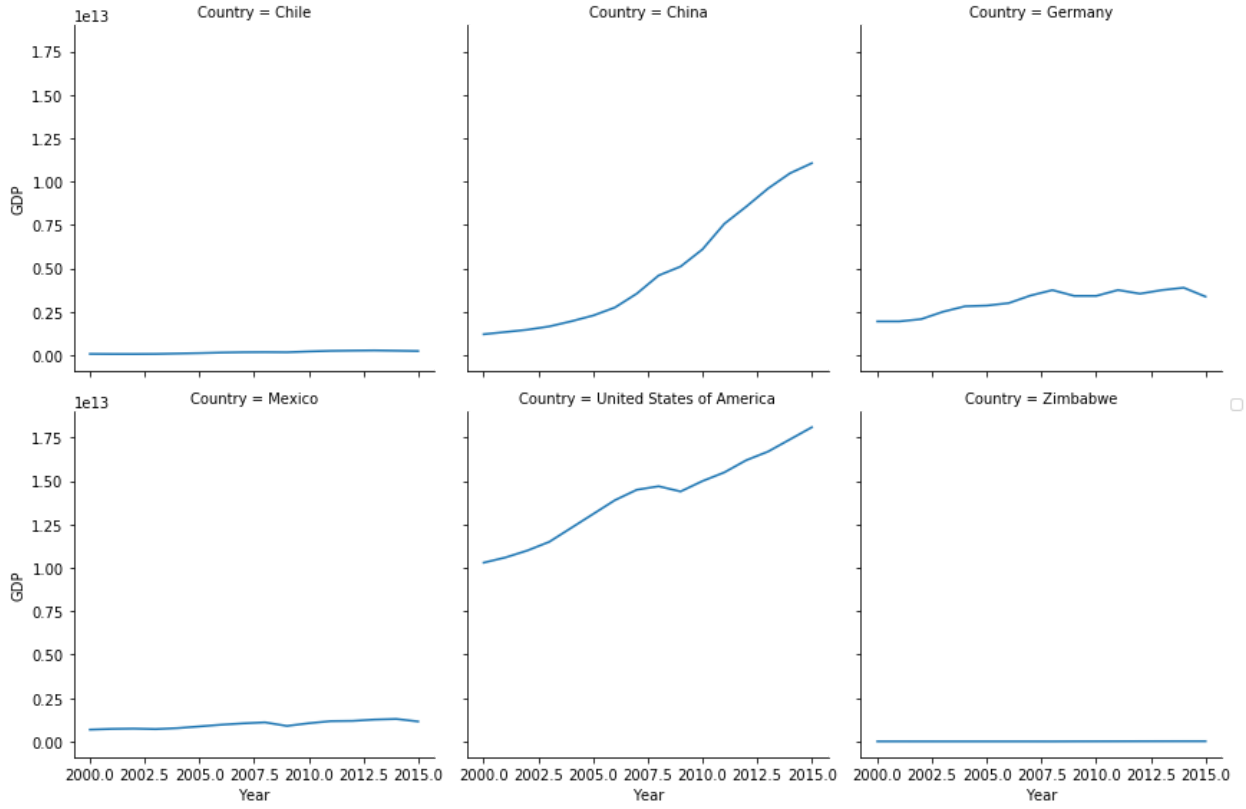
GDP Growth and Life Expectancy Less Connected than You Might Expect

Dane Miller July 25, 2018

Common wisdom might suggest a direct correlation between GDP and life expectancy: as a country's GDP rises, so should average life expectancy at birth. The relationship is less one-to-one than you might expect.

A comparison of data from the World Bank on GDP growth and from the World Health Organization on change in life expectancy between the years 2000 and 2015 for six countries - Chile, China, Germany, Mexico, the United States, and Zimbabwe - reveals a more complex dynamic.

First, let's take a look at growth in GDP over the period for the six countries in this study:



During the period, China experienced rapid growth, a possible result of strong state investment while private investment after the recession in 2008 led to slower growth elsewhere.[1] China was

[1]Writing for the HuffPost, John Ross, senior fellow at the Chongyang Institute, makes the case for this explanation. "Why Are China and India Growing So Fast? State Investment," The Huffington Post, 08/29/2016, https://www.huffingtonpost.com/john_ross-/china-india-growth_b_11655472.html.

followed by the US in this study. Germany also made some gains, while the remaining countries experienced a growth rate that was essentially flat. Conventional wisdom would suggest that China and the US could have seen similar gains in life expectancy, but that is not what the trends show.

A similar visualization for life expectancy looks a bit different:

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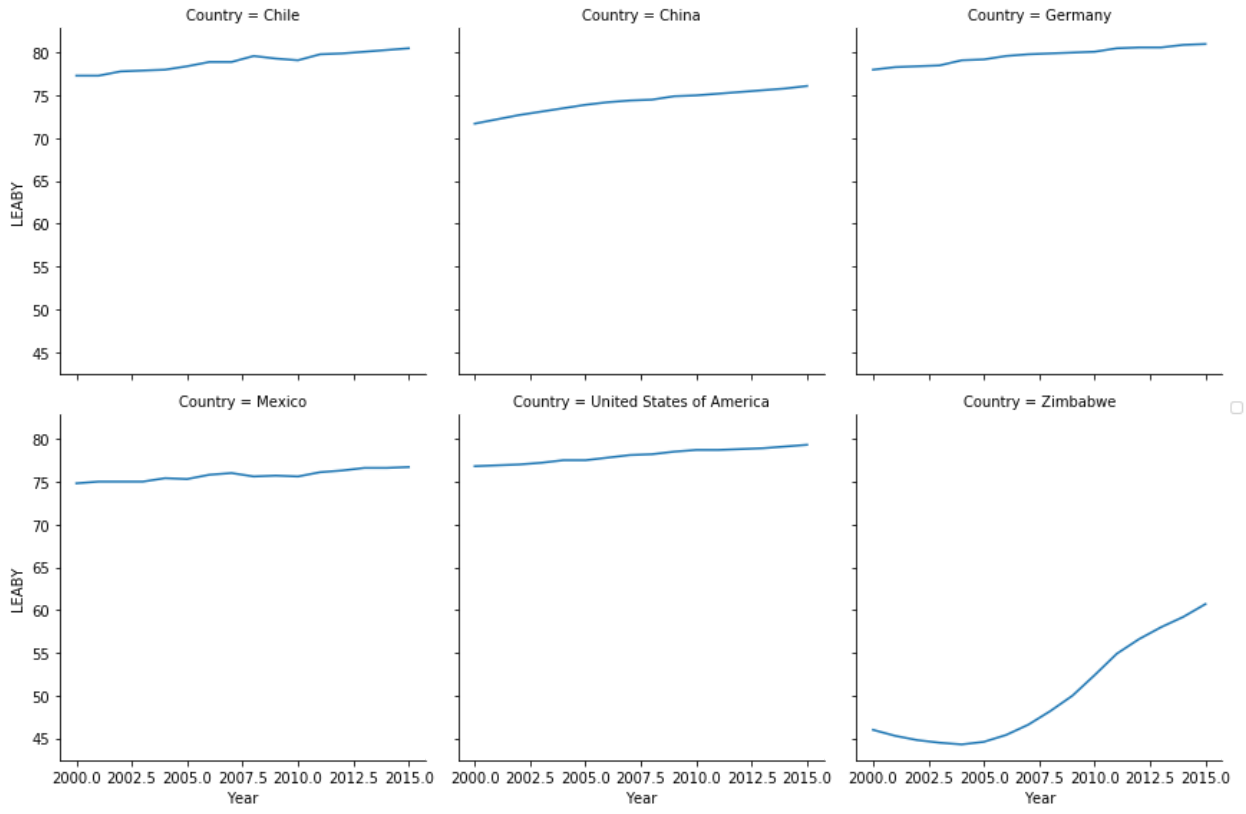
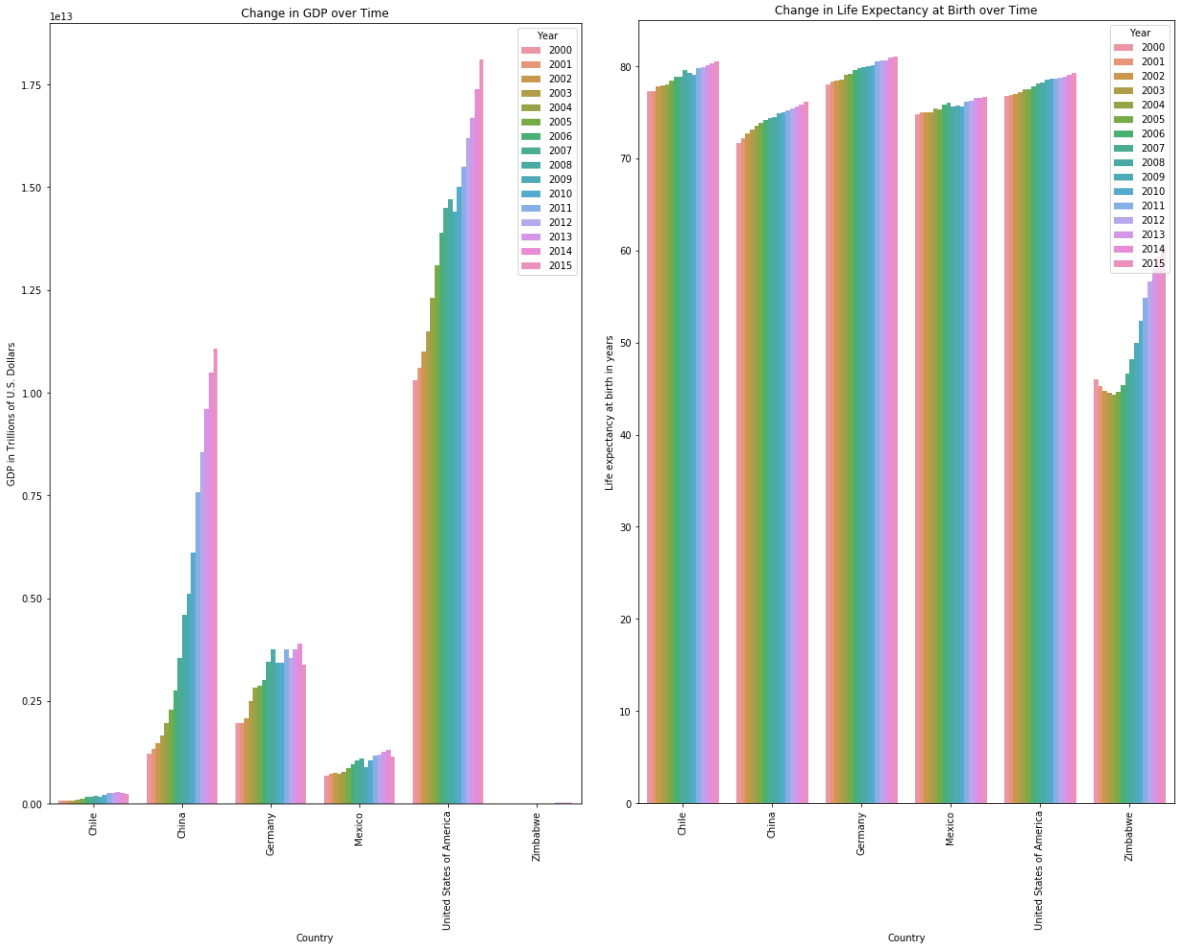


Here we see the most rapid rise in life expectancy was in Zimbabwe. This is perhaps unsurprising as Zimbabwe and many other sub-Saharan African countries had the most ground to make up for in comparison with other countries. As life expectancy rises, it plateaus to some degree as the gains of factors like modern medicine, improved hygiene, and increased agricultural yields are felt less drastically. Indeed, by comparison with Zimbabwe, the other countries in this study only saw minor changes in life expectancy. The more surprising findings come when countries with higher GDPs are compared. These trends can be visualized more clearly in the following bar plots:



As can be seen, Germany, a highly developed, industrialized nation enjoys a higher life expectancy than the US, which has a higher overall GDP. Cultural factors such as high educational attainment, better access to healthcare, and lower levels of inequality may explain this difference to some degree. The recent report to the UN on rising levels of extreme poverty in the US from special rapporteur Philip Alston highlights many of the shortcomings in the current system.[2] Rising inequality in the US may point to a decline in the years to come; indeed, China is projected to have a higher life expectancy than the US in the year 2018.

The more surprising comparison is between Chile and the US. As of 2016, Chile was one of only 29 countries in the world with an average life expectancy over 80 years.[3] A middle income country, Chile enjoys a high life expectancy. GDP growth is clearly not everything.Comparing

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[2] A summary of some of the findings can be found at Alston, Philip. “Statement on Visit to the USA, by Professor Philip Alston, United Nations Special Rapporteur on extreme poverty and human rights*.” December 15, 2017. https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=22533

[3] http://www.accdis.cl/eng/en/esperanza-de-vida-en-chile-llega-a-los-805-anos-la-mas-alta-de-latinoamerica/#

only two sets of data, in this case GDP growth and change in life expectancy, can suggest some trends but masks other important factors in the development of countries. A more detailed study would need to take into consideration how factors such as healthcare access, economic inequality, educational attainment, and cultural attitudes and norms might also impact life expectancy.