Croatia – Population Trend 1995 - 2014

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Dataset(s)

For this project I used the following datasets:

● World Development Indicators Dataset

Data Source: https://www.kaggle.com/worldbank/world-development-indicators

Folder: 'world-development-indicators'

● Country coordinates for plotting (original file was updated by me to leave only coordinates for ex-Yugoslav countries)

Source: https://github.com/python-visualization/folium/blob/master/examples/data/world-countries.json

Motivation

Being myself an emigrant from Croatia, I am interested in Croatian migration trends in last few decades. As one of ex-Yugoslav republics, in the last 30 years Croatia faced three events that could have an impact to its population:
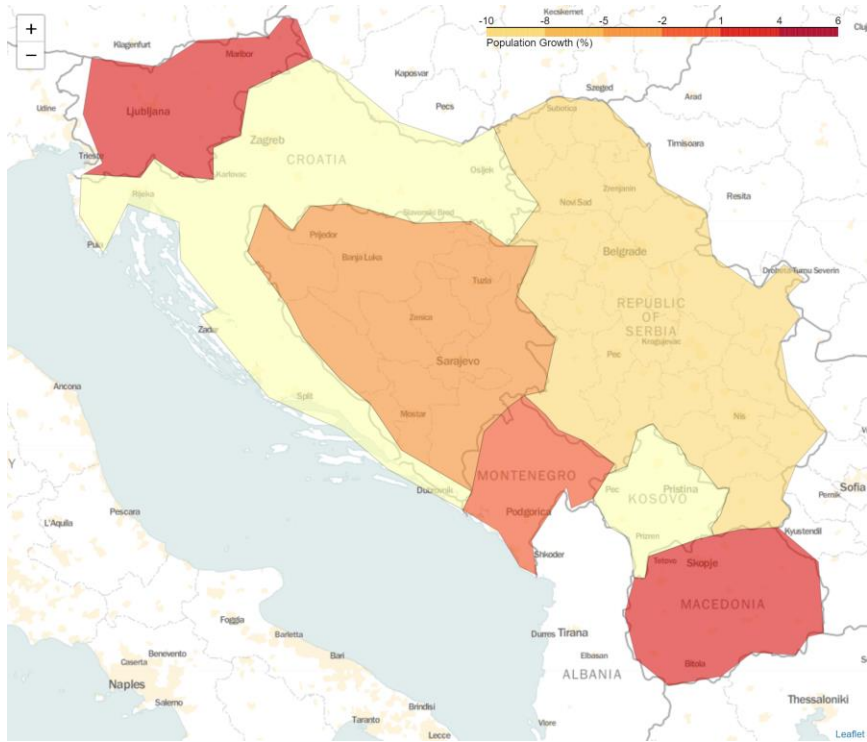
1. Yugoslav wars (1991 – 1995), led to the breakup of Yugoslavia
2. Great Recession (2008), with follow-up recessions shaking Croatia until 2014
3. Croatia joined EU (2013), Croatians acquired right to move and reside freely in other EU member states

This research is very personal to me. In addition to me emigrating (event #1) in 1995, my younger nephew emigrated this year (event #3). So, let's start crunching the data.

Research Question(s)

Were the events, mentioned in the previous slide, impacting population of Croatia, and if yes, how much? Is there any relationship with GDP?

Findings 1 – Population Growth Rate (%) (1995 -2014)

The population growth rate:

$$PR = \frac{(V_{Present} - V_{Past})}{V_{Past}} \times 100$$

PR = Population Percent Growth rate
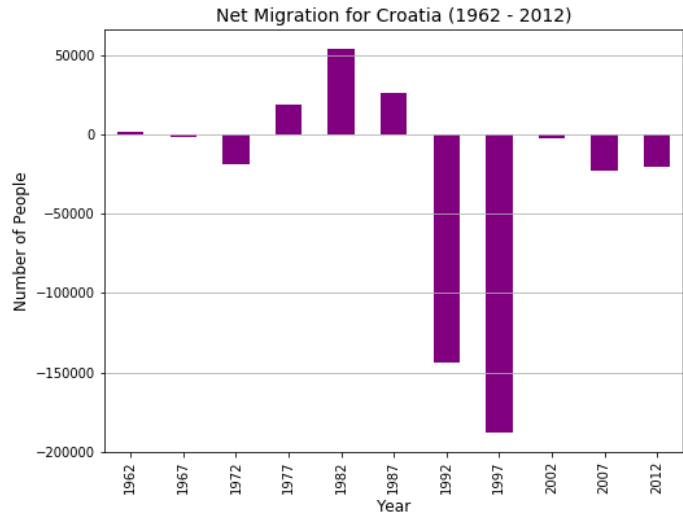
V_{Past} = Past Value

$V_{Present}$ = Present Value

Positive values mean growth and negative values mean decline in population.

The map show that of all ex-Yugoslav countries, Croatia had the highest population decline rate, almost 10%.

In the following slides we will try to explain this decline.

Findings 2 – Net Migration Rate (1962 – 2012)

Net Migration for Croatia (1962 - 2012)

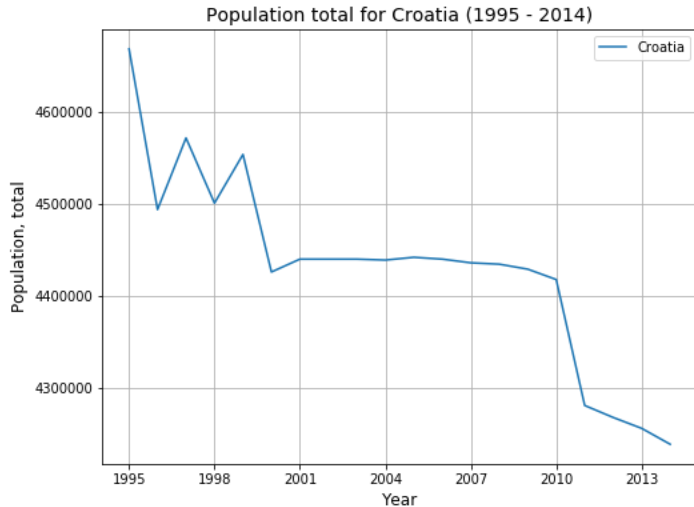The net migration rate is the difference between the number of immigrants and the number of emigrants.

Data is available since 1962 in 5 years steps.

Negative rate means that more people emigrated.

The biggest emigration rate is in 90's, during and after Yugoslav wars.

The 2nd and smaller increase in emigration rate (2007, 2012) corresponds to the Great Recession and its aftershocks.

Findings 3 – Total Population (1995 – 2014)

Population total for Croatia (1995 - 2014)

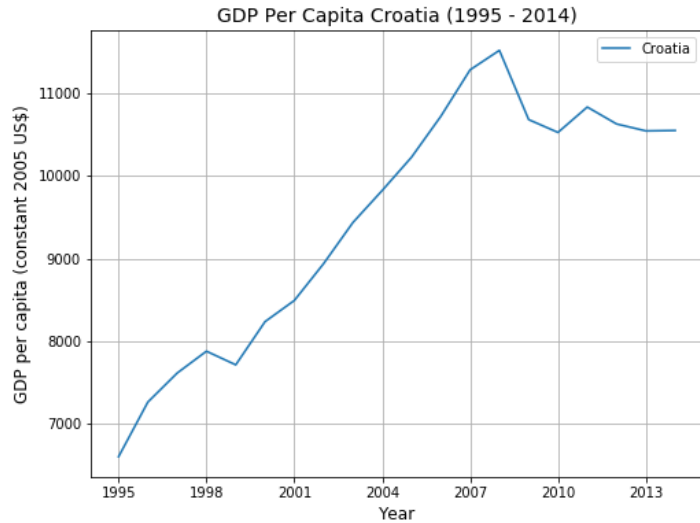There is no data before 1995, so we can not see the trend during the war.

After the war end, population is mostly declining.

Population is getting stabilized around 2000 and it is stable almost until 2010.

Another population decline starts around 2010. That corresponds, with the slight delay, to the impacts of the Great Recession in Croatia.

Decline is continuing since then.

There is not enough data to research the impact of Croatia joining EU (only one year of data).

Findings 4 – GDP Per Capita (1995 – 2014)

GDP Per Capita Croatia (1995 - 2014)

There is no obvious connection between GDP and population declining.

GDP is increasing between 1995 and 2008 and for this period there is even a negative correlation.

After 2008 we can see a slight decrease in GDP, probably caused by the Great Recession.

GDP stops decreasing around 2010 when population starts declining again.

Findings 5 - Summary

- The Yugoslav wars heavily impacted population of Croatia for almost a decade

- The Great Recession had a smaller but still significant impact that lasted for many years

- I believe from experience that joining EU caused continuous population decline. A significant number of young people is leaving Croatia every year. But in our data set there is no data that could collaborate this. We need data after year 2014 to be able to make any conclusion.

- There is no direct relationship between GDP and population decline.

Acknowledgements

I had no one giving me feedback.

References

1. Net Migration Rate Definition, Wikipedia

2. Calculating Growth Rates, University of Oregon

3. Force Integer Tick Labels on Matplotlib, SciVision, Inc.

4. Great Recession, Wikipedia