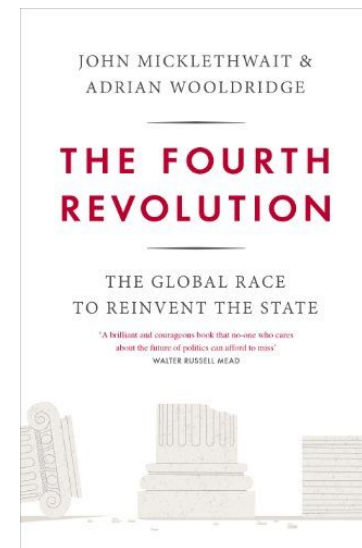
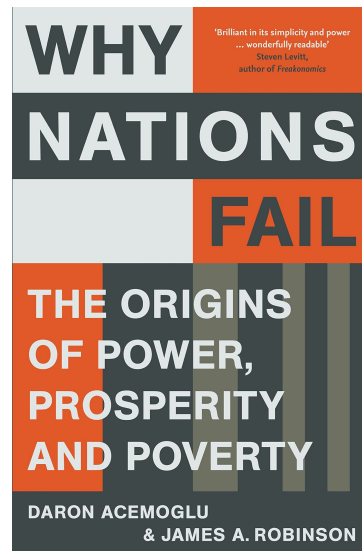


General Assembly- Data Science Immersive

Final Project Presentation, Dimitrios Mistriotis

Main Concept

Investigate a possible correlation between GDP, democratic liberties and civil liberties.



Project Steps

Data Acquisition

Define sources

World Bank (GDP)

Economist Business
Unit (Democracy)

Frazer institute
(Economic Freedom)

Merge and investigate

Put them together

Juniper Notebook

+

pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$

Identify relationships

... with the usual
suspects

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
from scipy.stats import mode

import statsmodels.formula.api as smf
```

Findings & Learnings

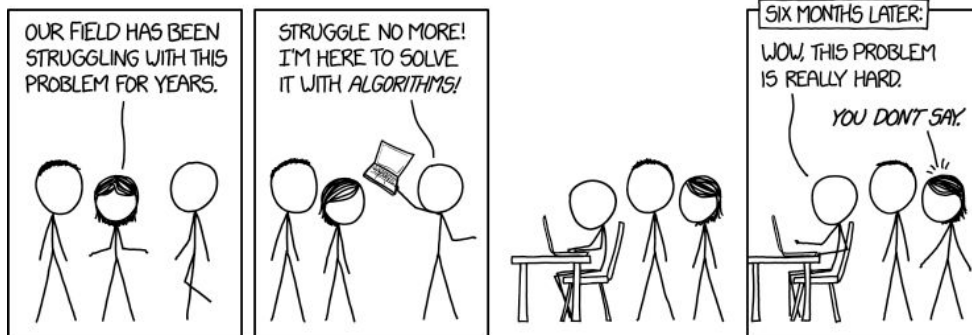
Correlation – R^2

Pretty low at maximum 0.40 on the economic freedom, democratic correlation was even lower.

Did not expect so low...

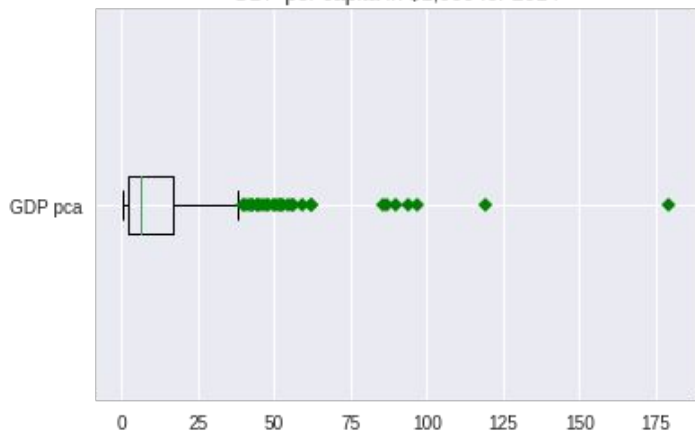
Learnings

- Over-ambitious while problem is hard
- Ignored time propagation effect
- Too few data points to be meaningful
- **(but)** Good future research starting point

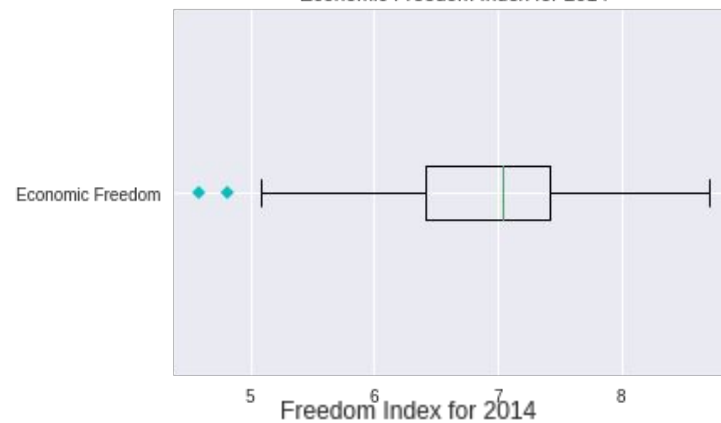


Plots

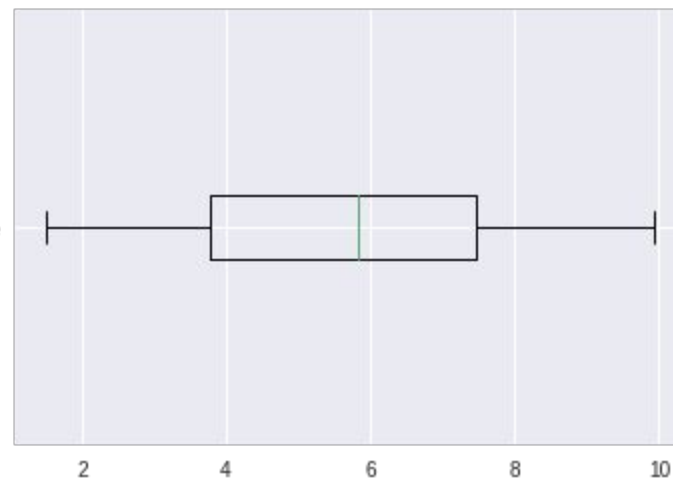
GDP per capita in \$1,000 for 2014



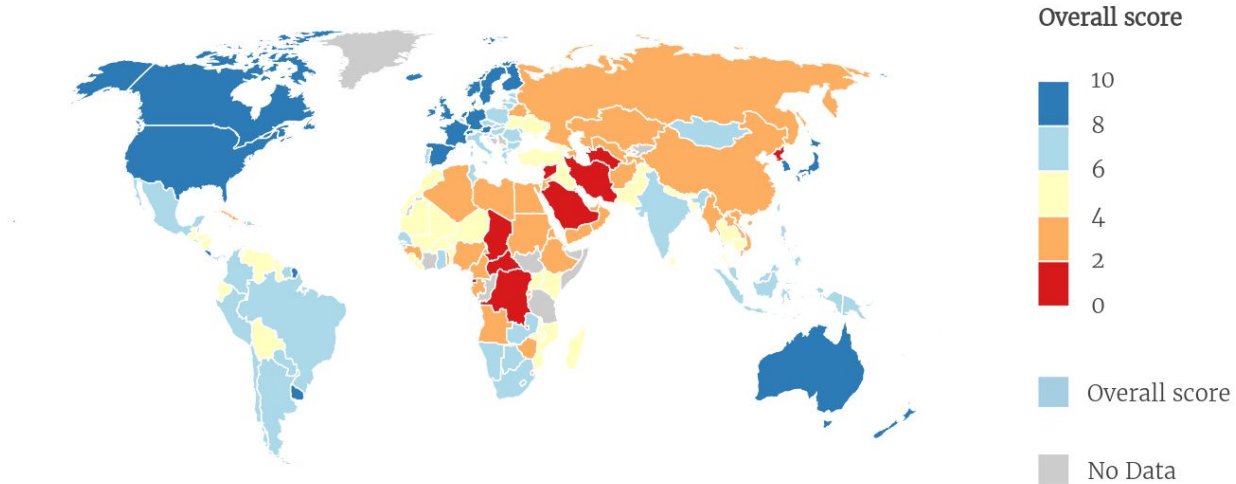
Economic Freedom Index for 2014



Democracy Score



Democracy Map for 2014



Some Examples on Prediction (for a specific year)

United Kingdom

GDP pca: **\$41,240**

Prediction: **\$34,198**

Off by: **17%**

What we know, used
a lot as standard



Saudi Arabia

GDP pca: **\$24,575**

Prediction: **-\$241**

Off by: **100.9%**

Saudis should
pay each year.



Singapore

GDP pca: **\$56,336**

Prediction: **\$34,329**

Off by: **39%**

Economic freedom >
democratic freedom



QnA