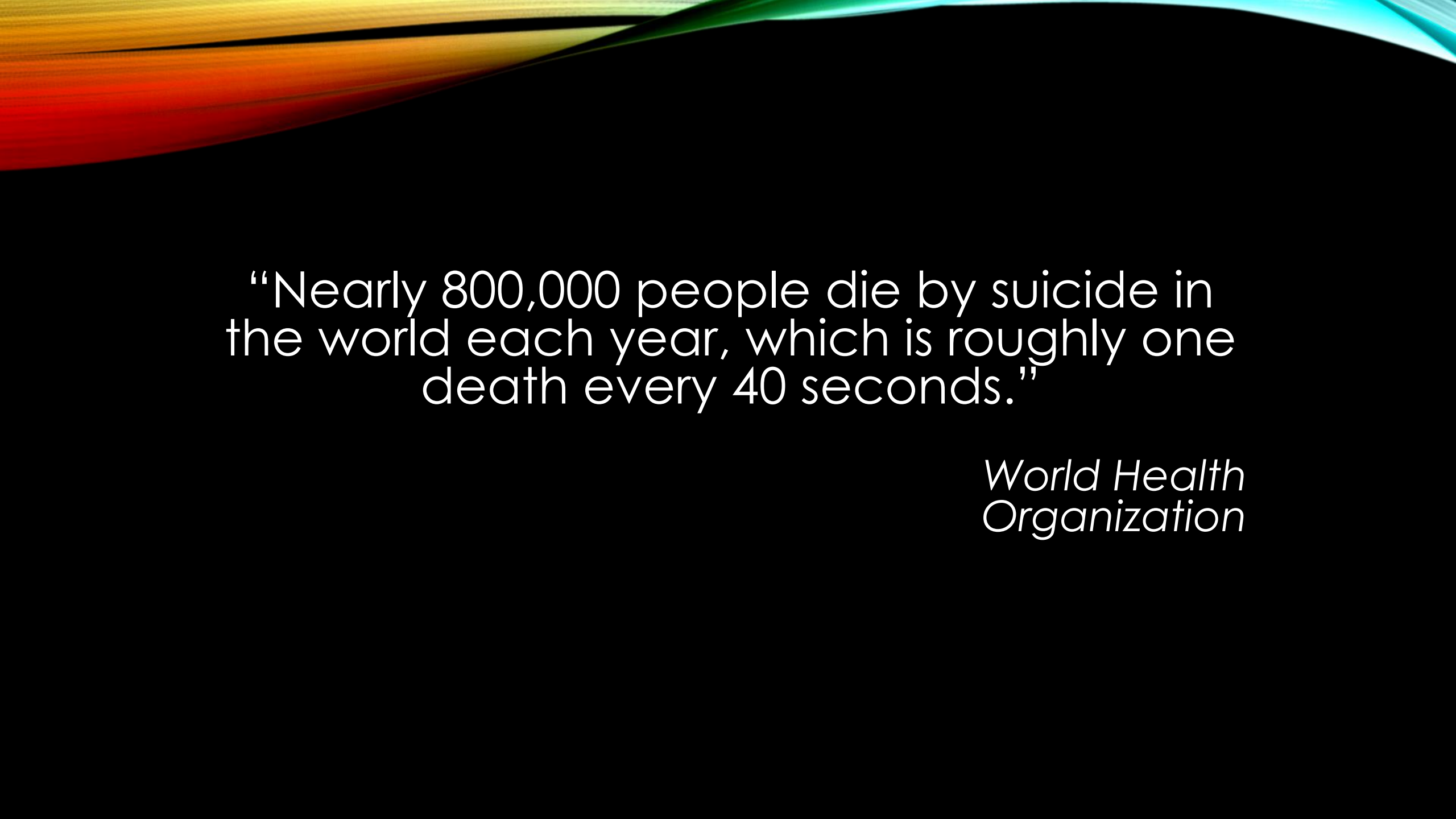


# Suicides Analysis (2010-2016)

Greece vs. the world





“Nearly 800,000 people die by suicide in the world each year, which is roughly one death every 40 seconds.”

*World Health  
Organization*

# MAIN FINDINGS



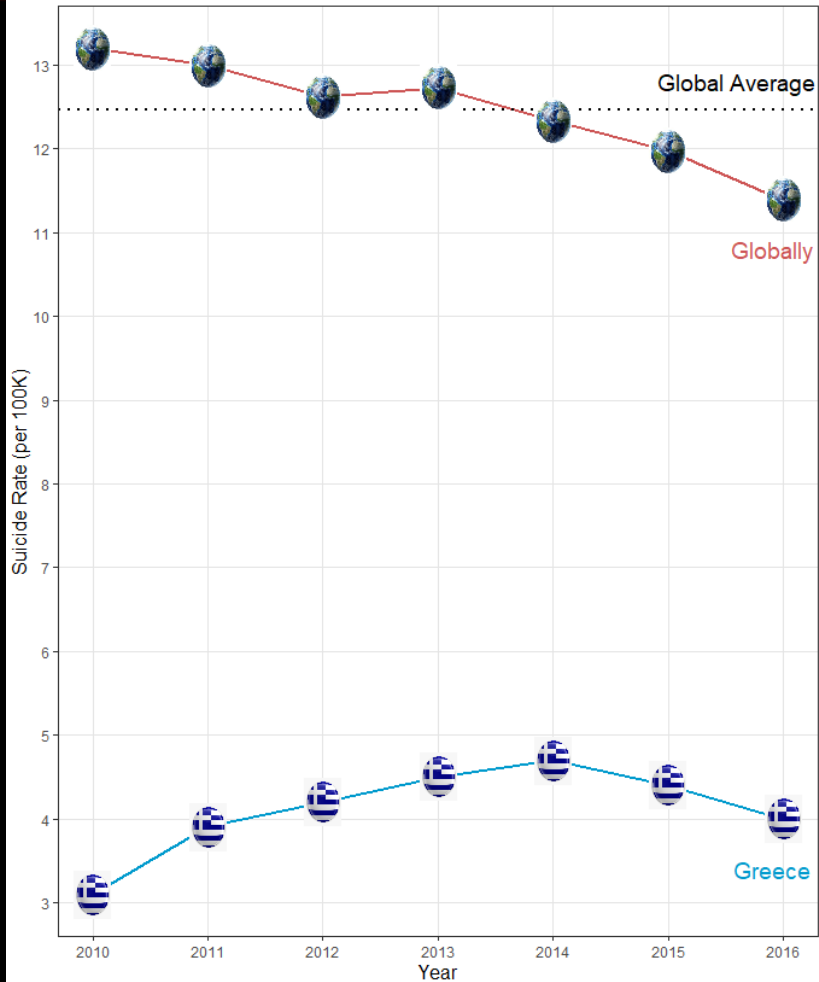
1. Greece has the lowest suicide rate in EU, 2<sup>nd</sup> lowest overall and is currently on a downwards trend.
2. Mediterranean countries have the lowest suicide rates.
3. In all countries, men are much more likely to commit suicide than women.
4. Greek men commit suicide about 4.5 times more compared to Greek women.
5. Long working hours - especially in Greece - do not lead to higher alcohol consumption and in more suicides.
6. Higher employment rate seemed to decrease the number of suicides and higher alcohol consumption to increase the suicide rates, but this was not the case for Greece.



# SUICIDE TRENDS

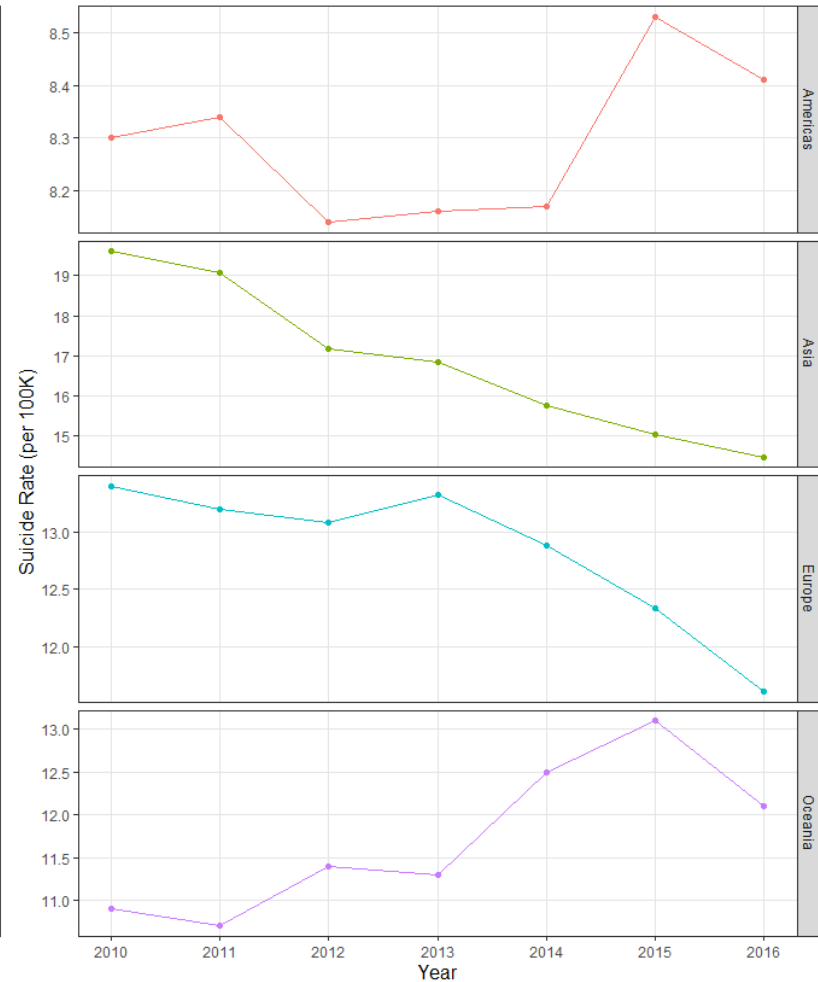
Suicides Trends

From 2010 to 2016



Suicides Trends by Continent

From 2010 to 2016



~4 suicides per 100K



~11 suicides per 100K



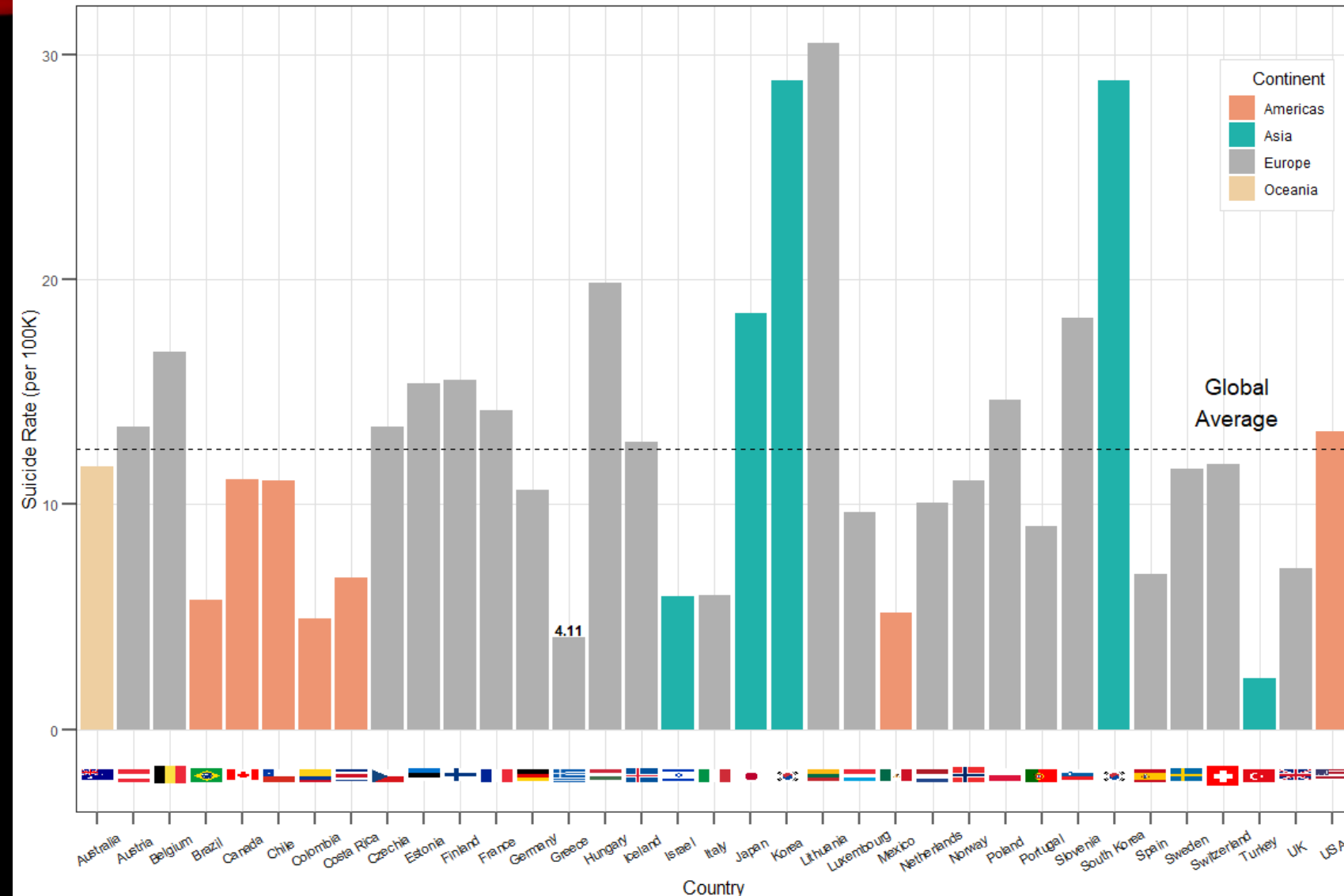
12.4 suicides per 100K

- Greece is far below the global average suicide rate.
- In contrast with the rest of the world, Greece was in an upwards trend since 2010 and the peak suicide rate was reached in 2014 (4.7 total deaths per 100K).
- After 2014 and until 2016, Greece showed a greater downward trend (~15% decrease) compared to Europe (~10%) and worldwide (~8%).

# SUICIDES PER COUNTRY

## Suicides across Countries

Average values for the period 2010 to 2016

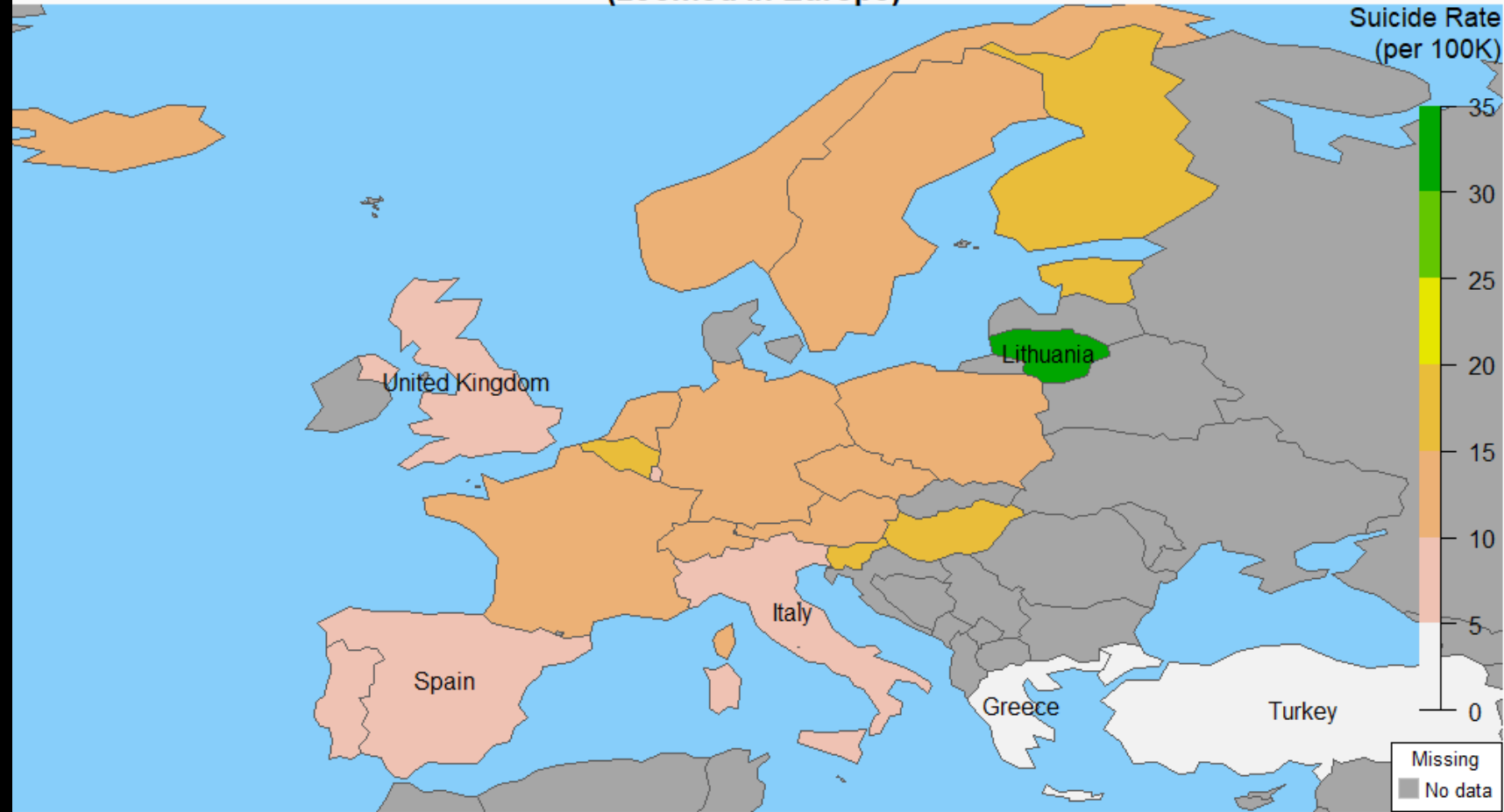


## Greece

- 4.11 average suicides per 100K
- Lowest suicide rate among all Europe and 2<sup>nd</sup> lowest in overall (behind Turkey)
- Belongs to 50% of European countries that are below the global average suicide rate and to 57% worldwide

# GEOGRAPHICAL HEAT MAP OF SUICIDE RATES

Suicide map for 2010 to 2016  
(zoomed in Europe)



## Lowest suicide rates

Globally:

Turkey, Greece

Among Europe:

Greece, Italy, Spain, UK

Mediterranean countries

## Highest suicide rates

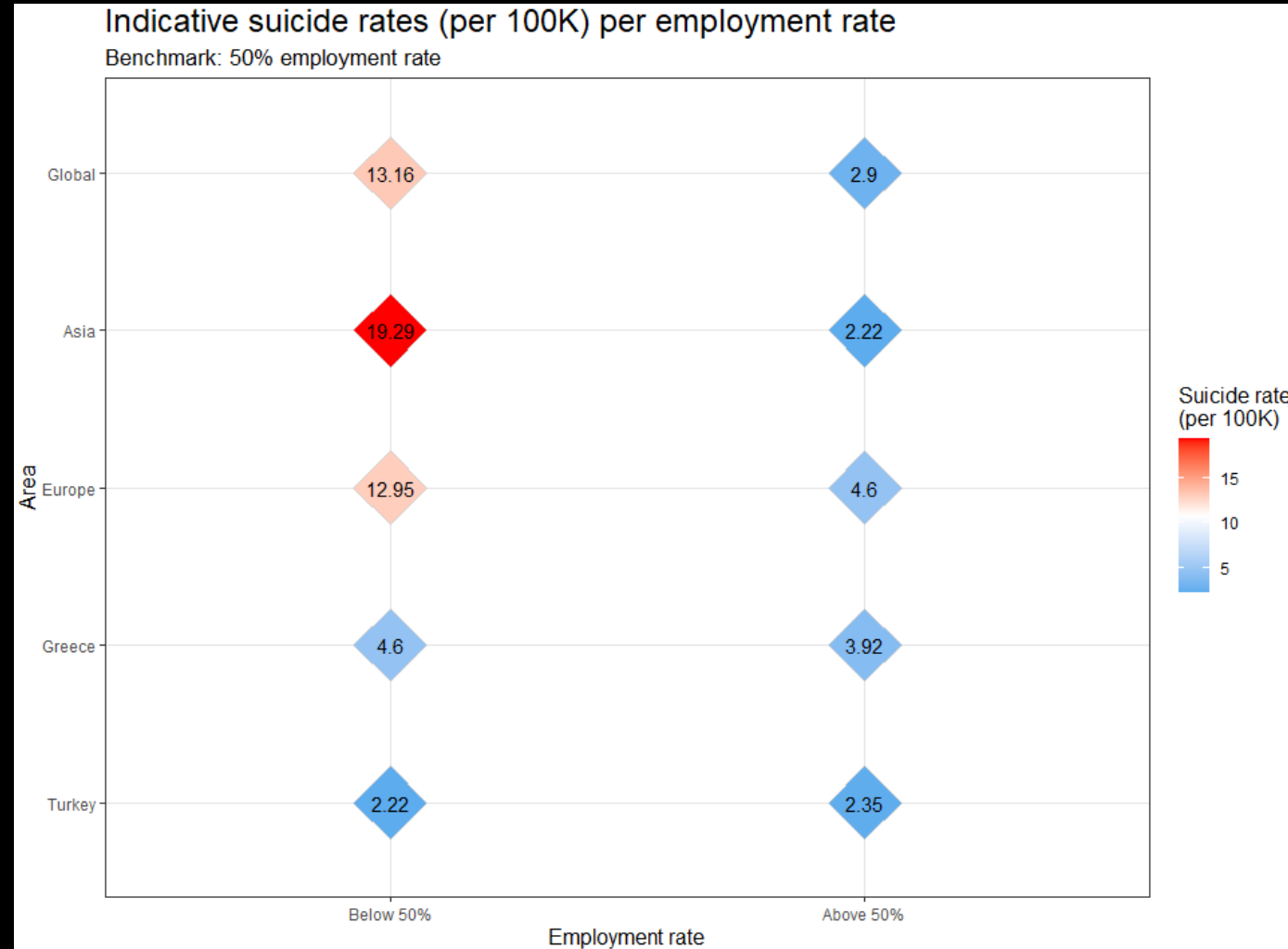
Slovenia, Hungary, Belgium, Finland, **Lithuania**

Central Europe

Northern Europe

# SUICIDE RATE PER EMPLOYMENT RATE

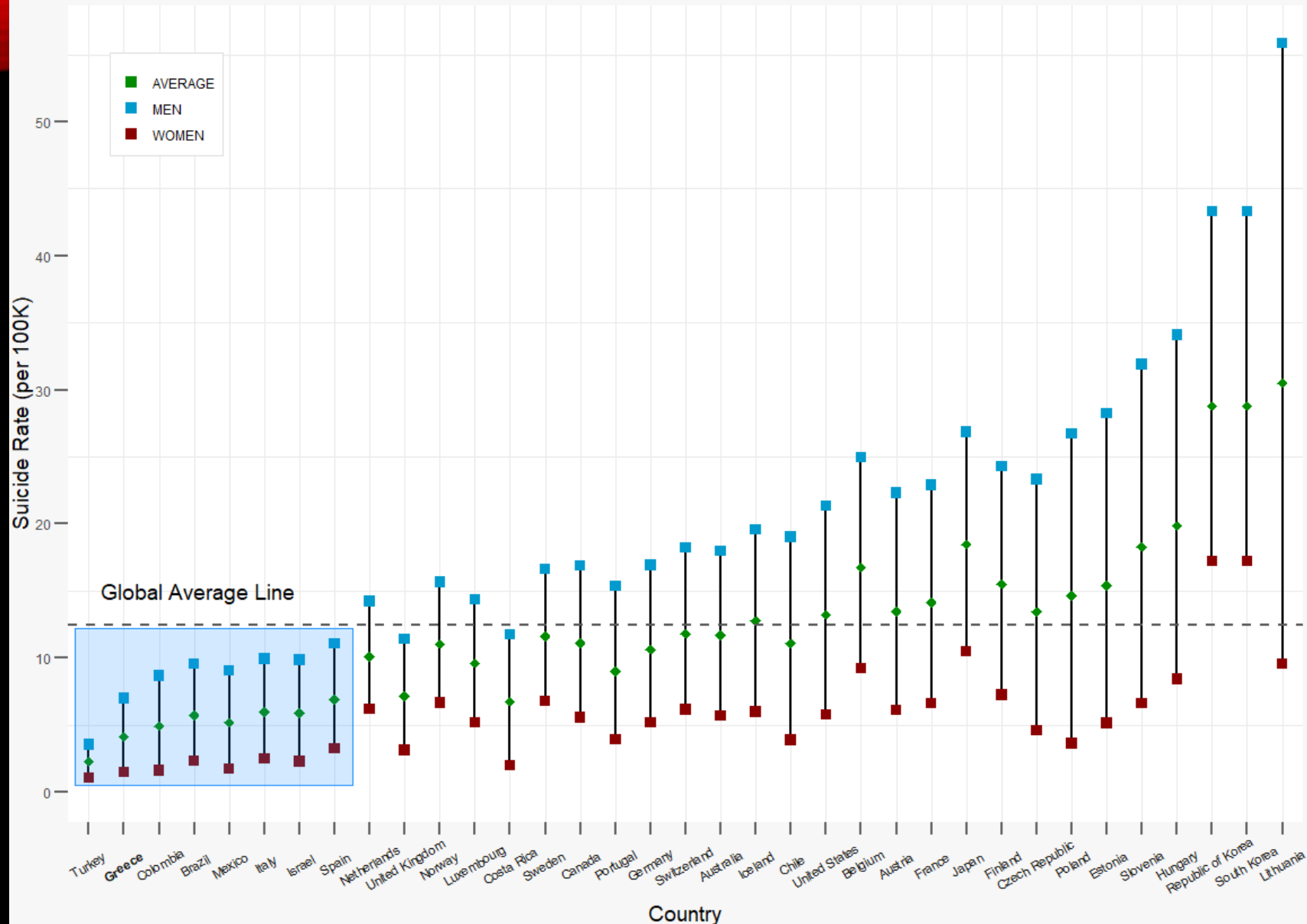
- Overall, the higher the percentage of working population, the less the suicides (especially in Asia).
- For Greece and Turkey, the level of employment rate, does not seem to affect number of suicides.



# SUICIDE RATE BY SEX

Suicides from 2010 to 2016 by gender

Ordering: descending order of suicide rates' difference by Sex



## Greece

- 2<sup>nd</sup> lowest difference between men and women and lowest among all Europe
- Below the global average suicide rates for both genders
- ~5.5 more deaths for men (on average)

## General

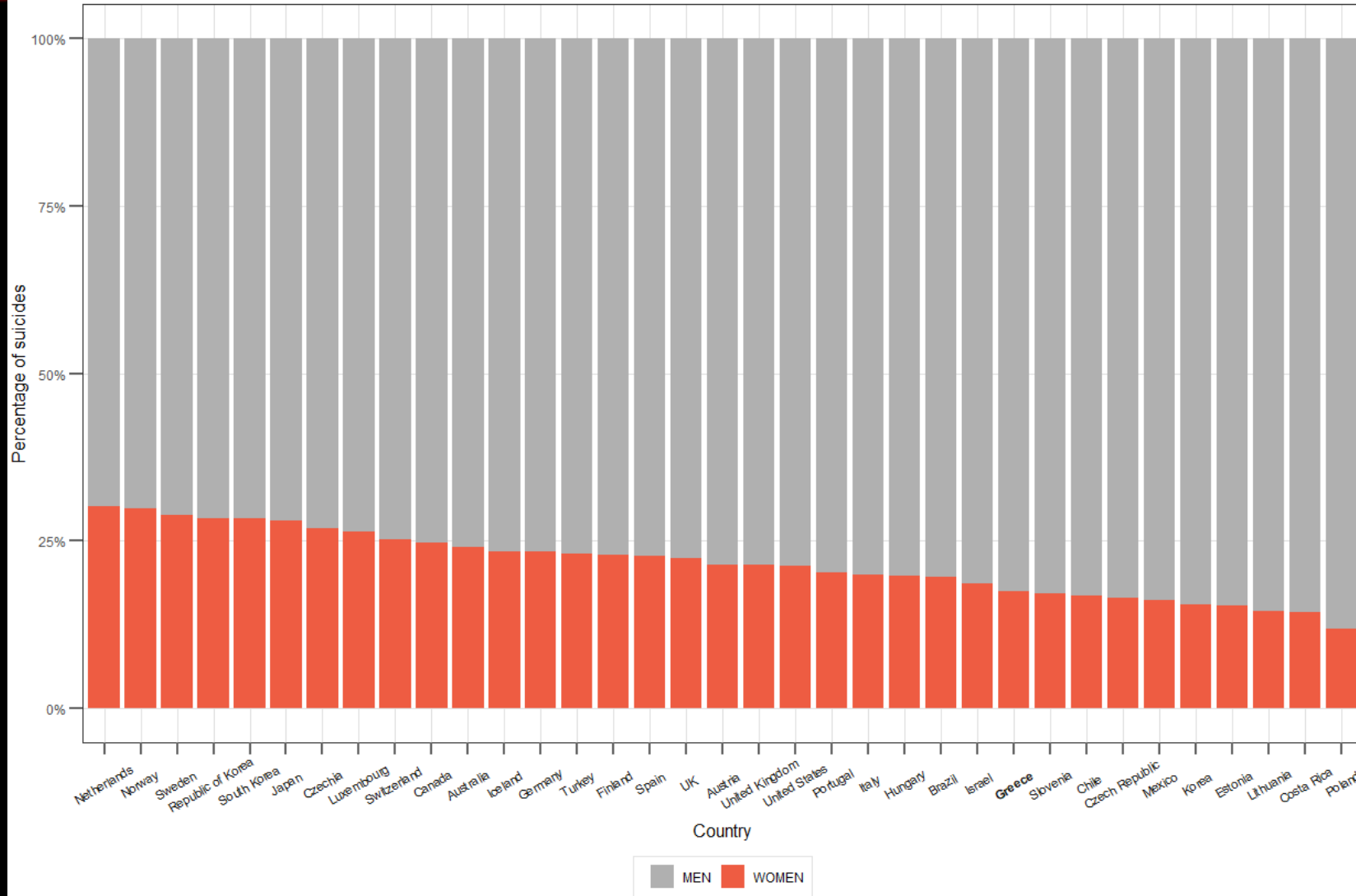
- Highest overall: Lithuania (~46 more deaths for men, on average)
- It seems that men have higher suicide rates compared to women.



# GENDER DISPARITIES

Percent distribution of suicides by sex for various countries

Ordering: From the lowest men suicide rate to the highest



## Globally

- In all countries, men commit suicide at a much higher rate compared to women.
- Min rate of men suicides: Netherlands (~70%)
- Max rate of men suicides: Poland (~88%)

## Greece

- 10<sup>th</sup> highest in men suicides
- ~82% of suicide victims are men (~18% more compared to Netherlands)
- ~18% of suicide victims are women (~6% more compared to Poland)
- ~4,5 times more men commit suicide compared to women

# DO ALCOHOL AND WORKING HOURS AFFECT SUICIDES?

Bubble plot of Alcohol consumption vs. Hours worked among countries

Bubble size: Average Suicide rate (per 100K) from 2010 to 2016

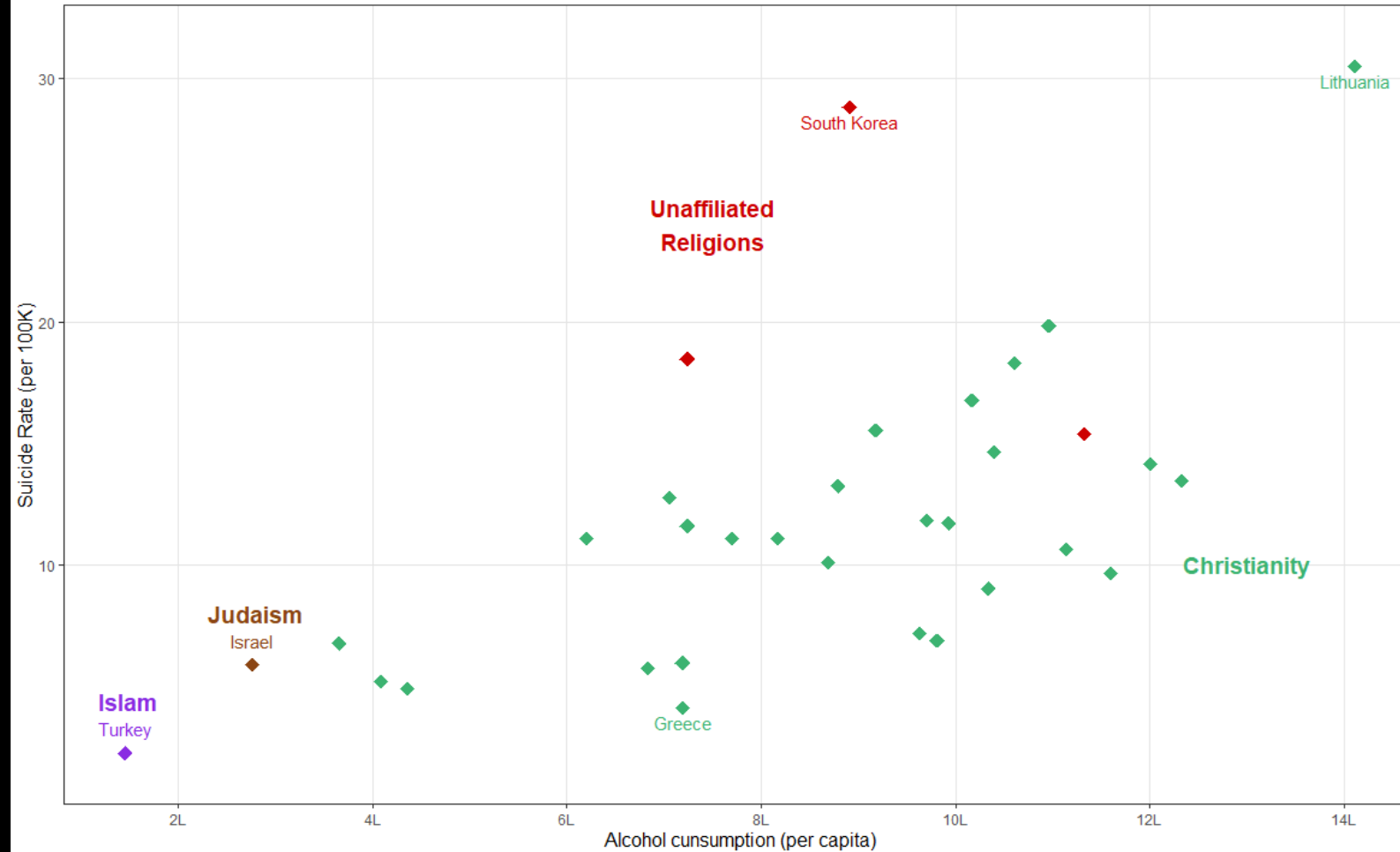


- It seems that employees in countries with fewer working hours drink more, but the relationship is weak ( $r = -0.43$ ).
- In Greece, despite the many working hours per worker and medium alcohol consumption the suicides rates are low.
- Most European workers work less than 1,800 hours annually, consume high alcohol proportions and commit suicides at remarkable rates.
- Long working hours do not seem to be a cause for suicide.
- Higher alcohol consumption may lead to higher suicides rates.

# ALCOHOL CONSUMPTION VS. SUICIDE RATE (I)

Correlation between suicide and alcohol consumption

Average values for the period 2010 to 2016



- Some countries differ significantly from others (e.g. Lithuania).
- Potential outliers to remove, before fitting regression line.

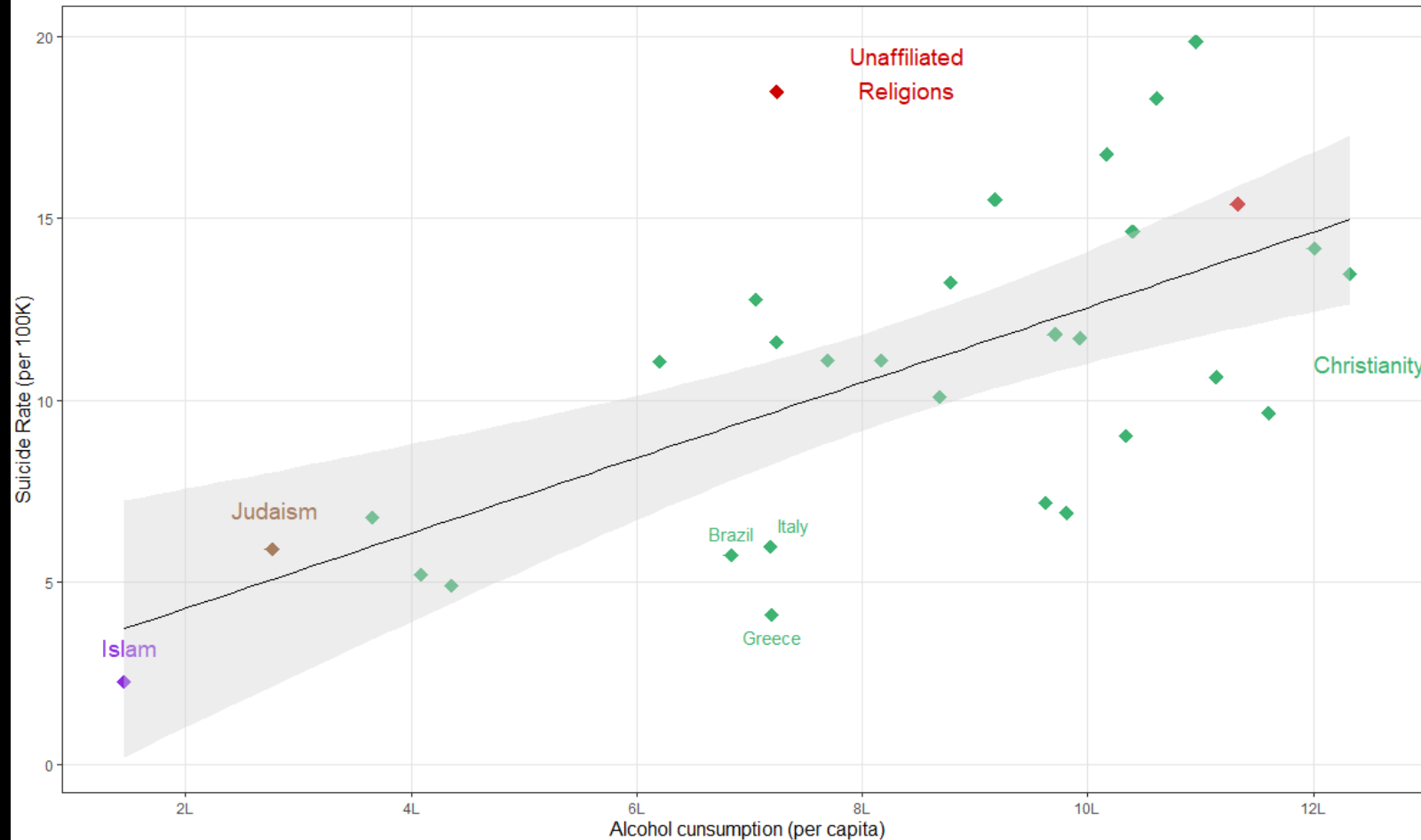
Shiny app: <https://anpliat.shinyapps.io/Suicides/>

# ALCOHOL CONSUMPTION VS. SUICIDE RATE (II)

## Correlation between suicide and alcohol consumption

Outliers removed based on Cook's distance (2/32 countries excluded)

Average values for the period 2010 to 2016



- Moderate positive linear relationship ( $r=.63$ )
- Countries with higher alcohol consumption have higher suicide rates.
- Each extra liter of alcohol consumed per capita, leads to 0.89 more suicides per 100K citizens, per year.
- ✓ Greeks are not so bibulous.
- ✓ Alcohol consumption does not influence suicides in Greece so much.



**Thank you for your attention!**

