

Covid19 Report

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1 The *CRISTINA* project

This report is part of a research project “**Co**Rona vIrus **Spa**Tial **aNA**lysis” (CRISTINA) which examines the time series progress of COVID-19 events in 177 countries of the world.

2 Greece

A series of visualizations for the progress of COVID-19 for **Greece**. We use absolute numbering scale and logarithmic scale to visualize the progress of “*confirmed cases*”, “*deaths*” and “*recovered cases*”. We also indicate the goverment interventions as dots on top of each line.

2.1 Confirmed Cases

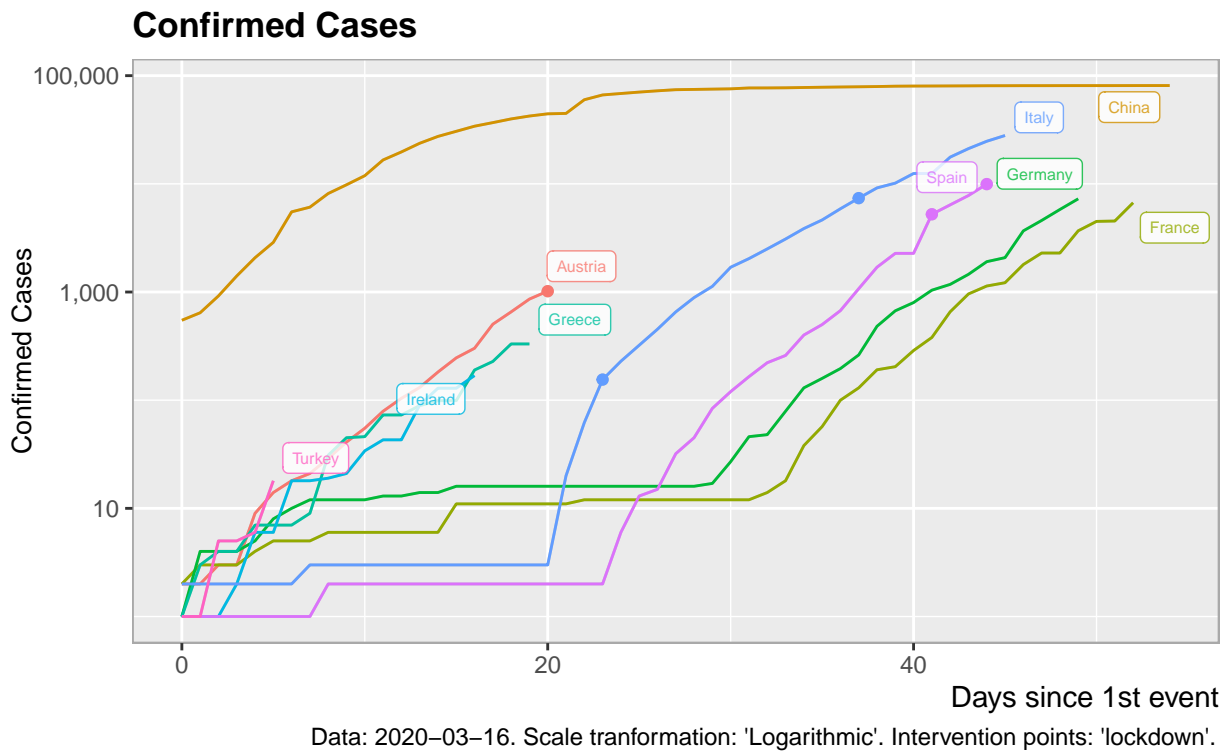


Figure 1: Confirmed Cases

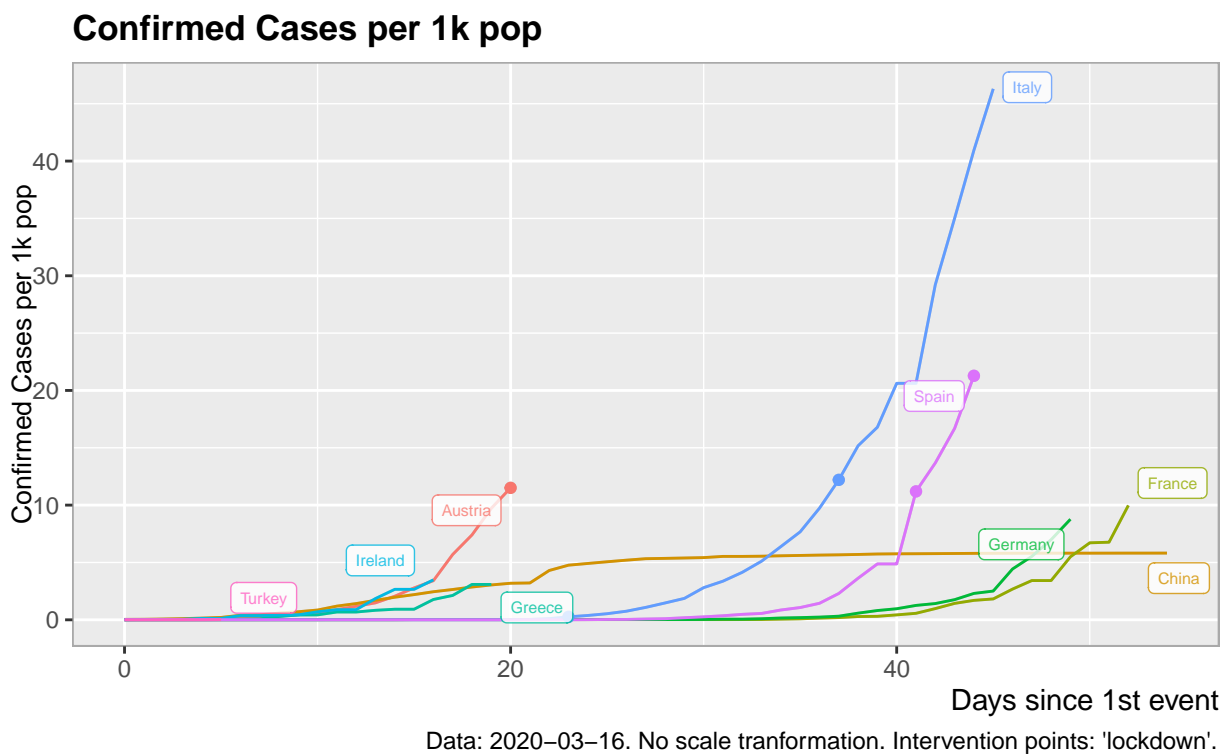


Figure 2: Confirmed Cases by 1000 population

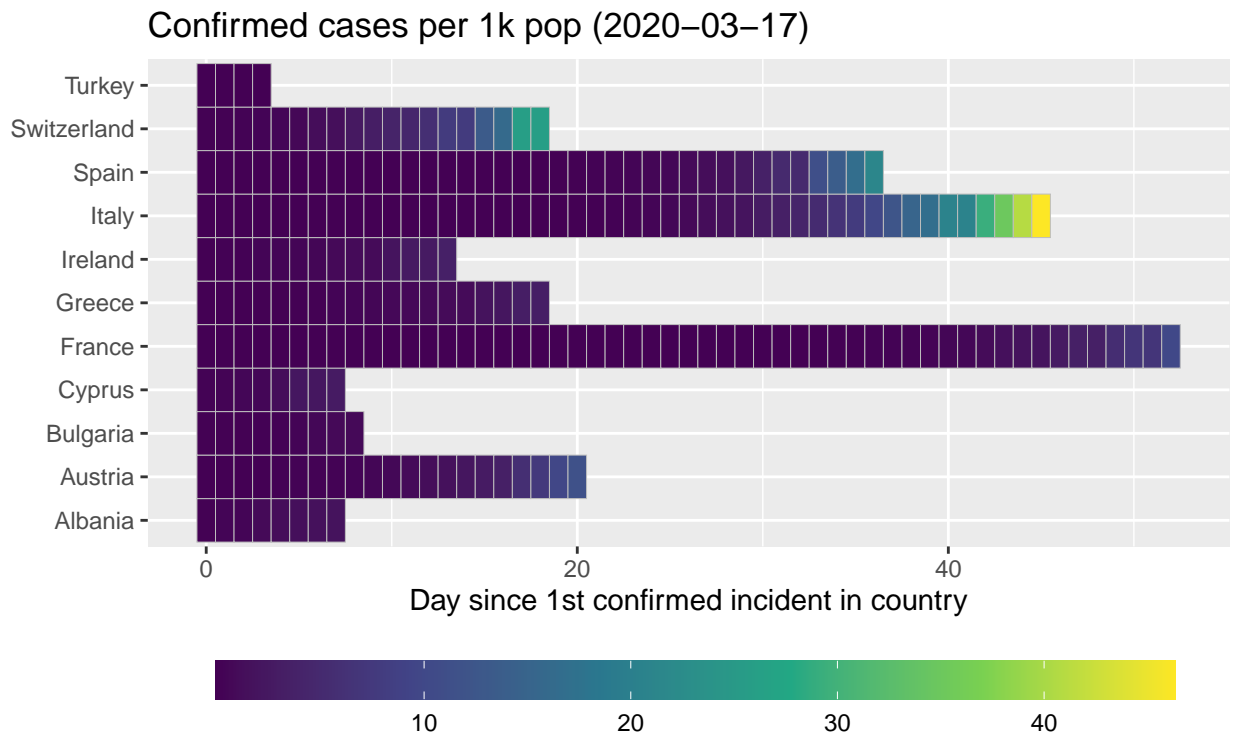


Figure 3: Confirmed Cases by 1000 population

2.2 Deaths

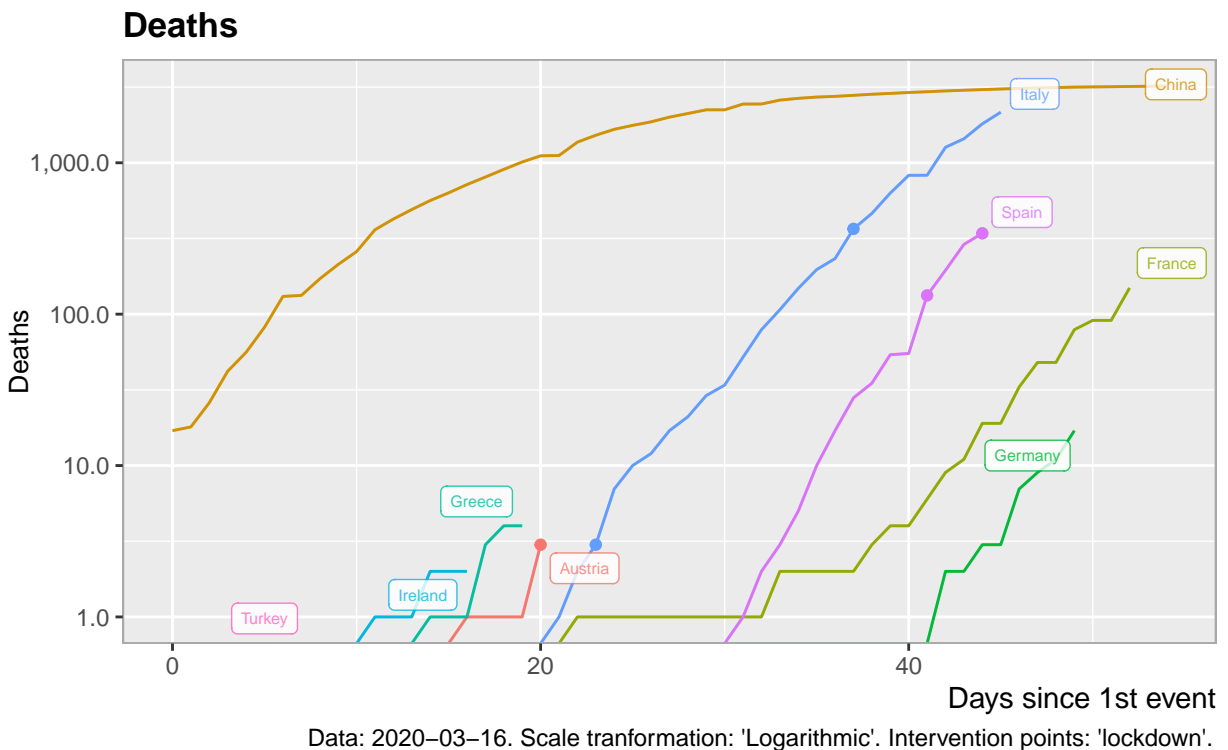


Figure 4: Number of deaths by country

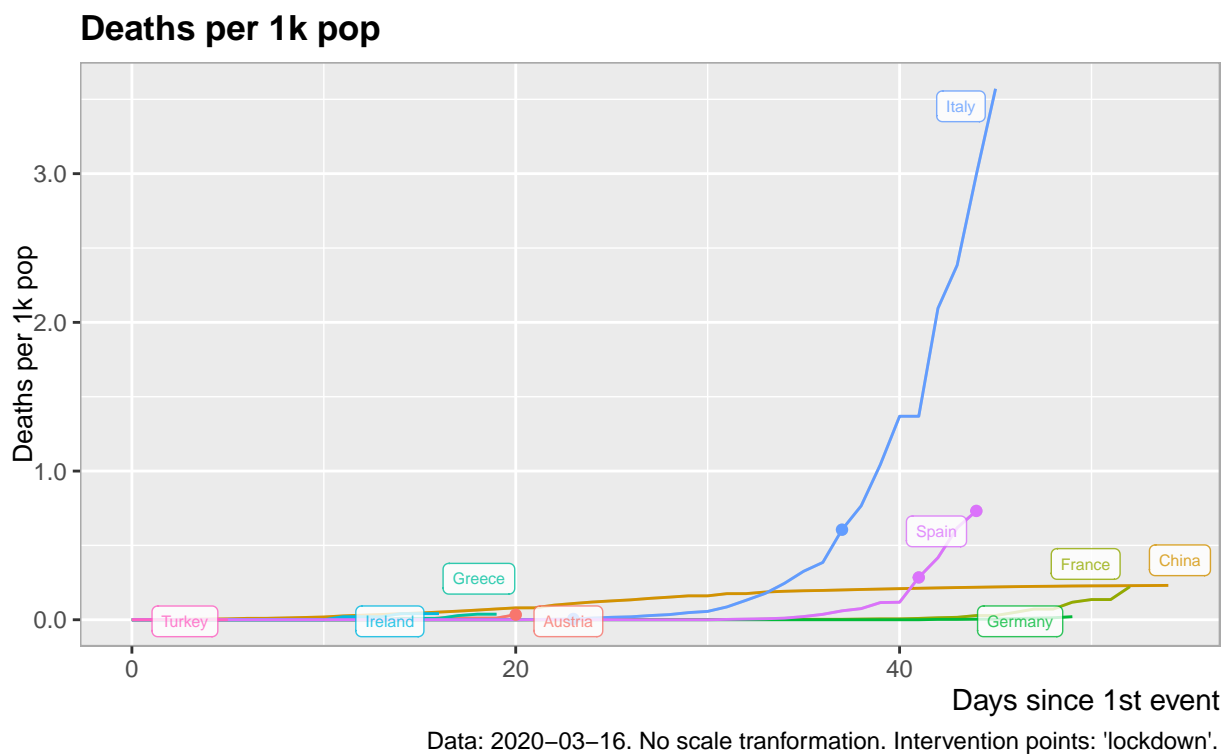


Figure 5: Deaths by 1000 population

3 Rate of change over time

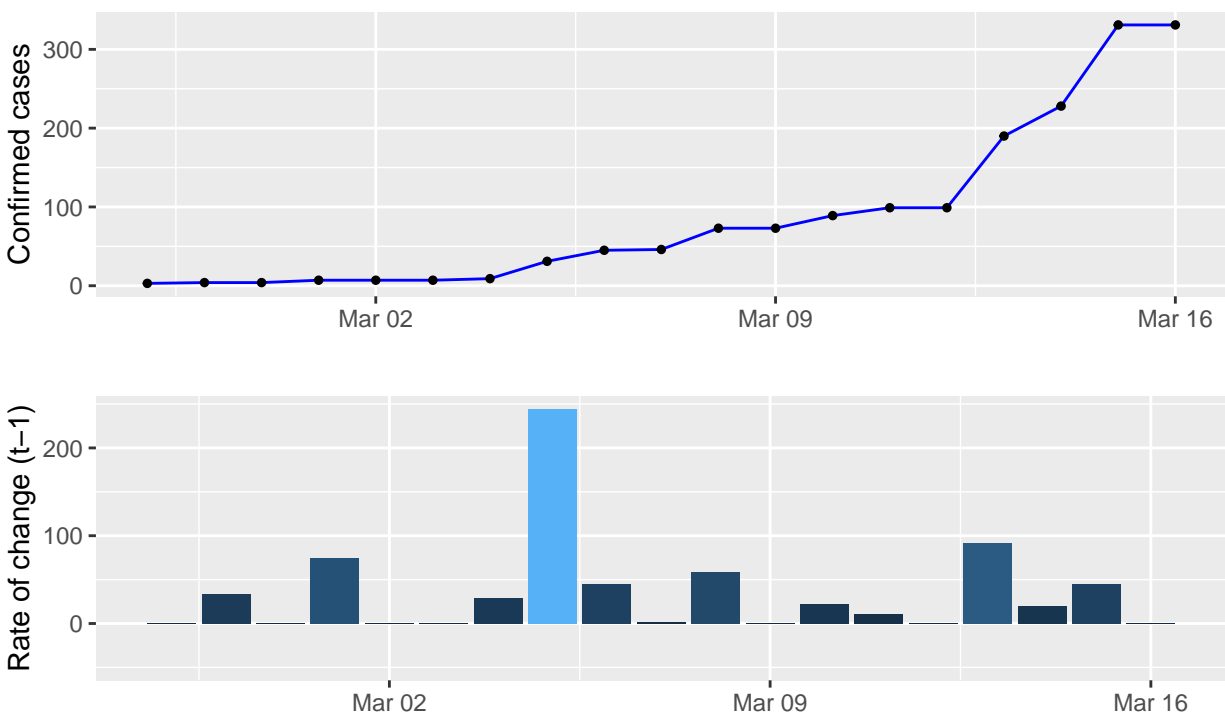


Figure 6: Rate of change of confirmed cases

4 Estimations

We estimate the future projection of *confirmed cases* for the next 5 days in Greece with two methods.

4.1 ARIMA projection

Projection of 'confirmed' cases for 5 ahead

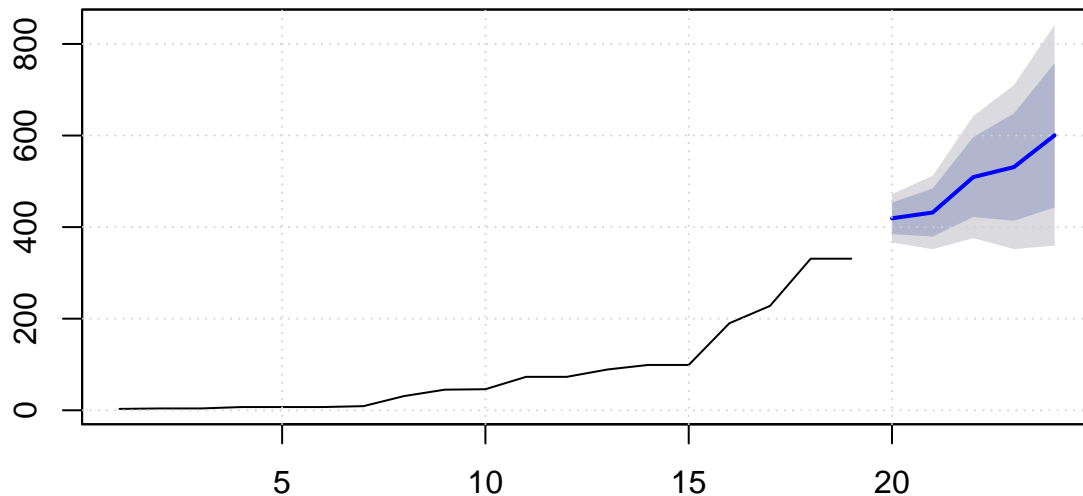


Figure 7: ARIMA projection

Table 1: ARIMA of 'confirmed cases' for 5 days ahead

	Estimation	Confidence 95% (Low)	Confidence 95% (High)
t+1 (2020-03-17)	419.2	366.5	472
t+2 (2020-03-18)	431.9	351.7	512
t+3 (2020-03-19)	509.3	375.9	642.6
t+4 (2020-03-20)	531.2	352	710.4
t+5 (2020-03-21)	600.6	359.6	841.7

- We cannot estimate the detection percentage yet. We need more data.
- With data up to 2020-03-16 in Greece we have 331 confirmed cases and 4 deaths.
- Estimated doubling time (based on 5 days time window) is approximately 2.3 days

4.2 PROPHET projection

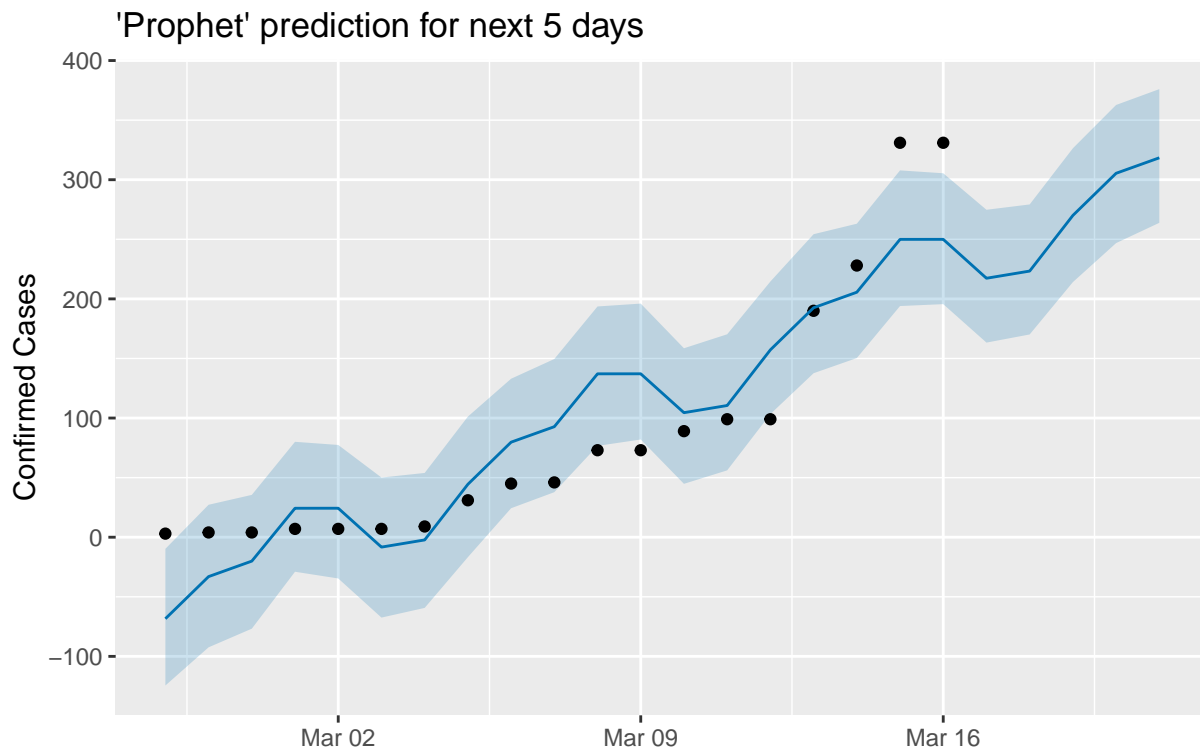


Figure 8: PROPHET Projection of confirmed cases over the next 5 days for Greece

Table 2: PROPHET of 'confirmed cases' for 5 days ahead for Greece

	Future_Date	Estimation	Confidence 95% (Low)	Confidence 95% (High)
t+1	2020-03-17	217.3	163.3	274.8
t+2	2020-03-18	223.3	170.1	279.2
t+3	2020-03-19	270	214.1	326.4
t+4	2020-03-20	305.4	246.8	362.7
t+5	2020-03-21	318.4	263.8	376