Covid19 Report

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Contents

1 The *CRISTINA* project

This report is part of a research project "**Co**rona v**I**rus **S**pa**TI**al a**NA**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 gonverment interventions as dots on top of each line.
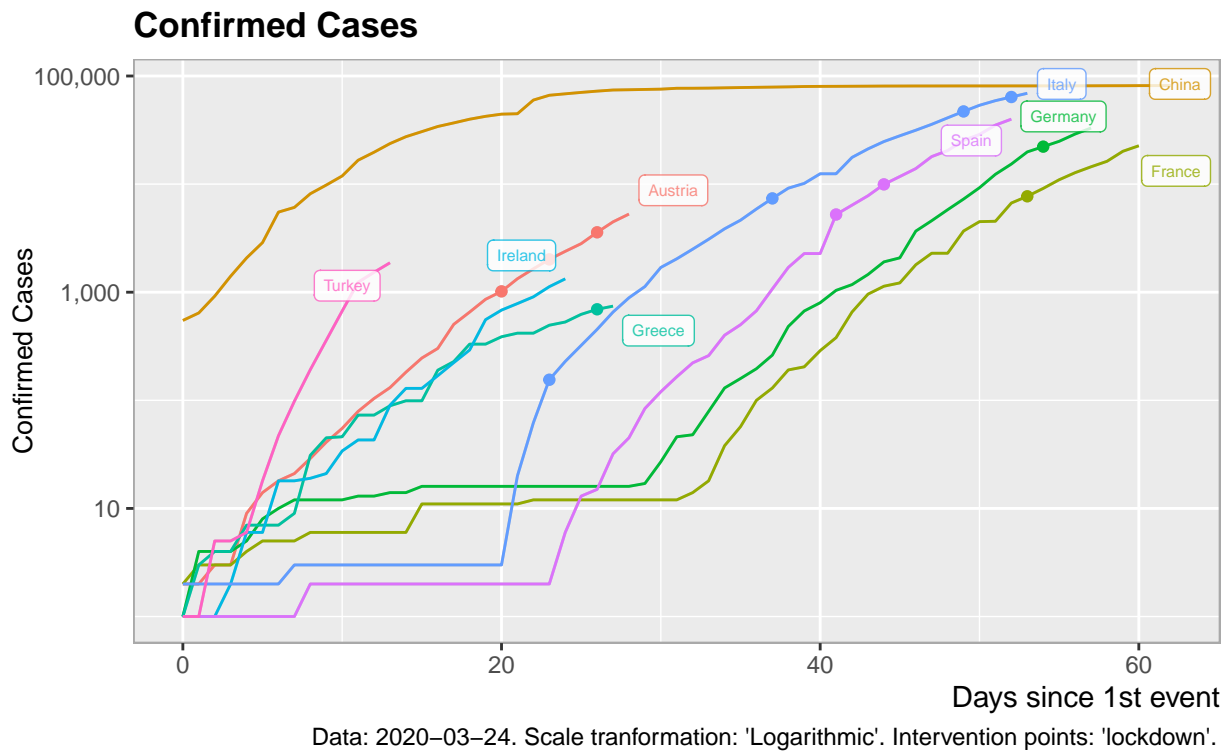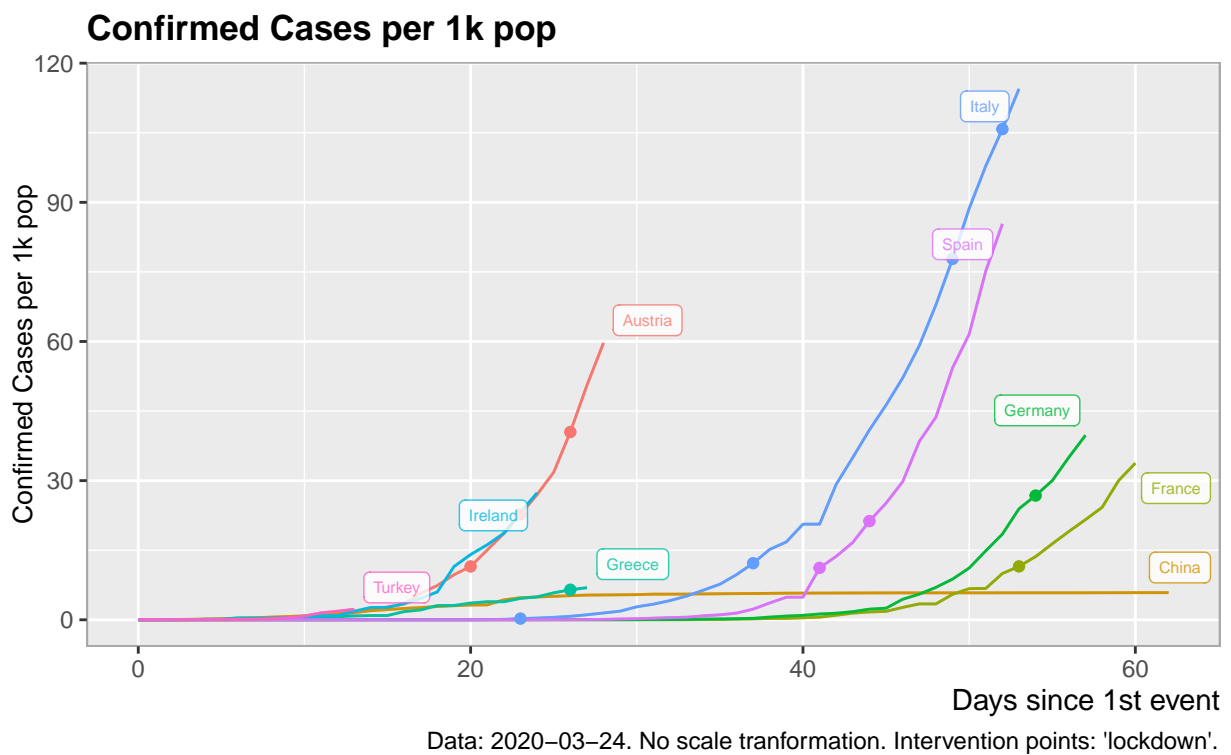
2.1 Confirmed Cases

Confirmed Cases

Data: 2020−03−24. Scale tranformation: 'Logarithmic'. Intervention points: 'lockdown'.

Figure 1: Confirmed Cases

Confirmed Cases per 1k pop

Data: 2020−03−24. No scale tranformation. Intervention points: 'lockdown'.

Figure 2: Confirmed Cases by 1000 population

Confirmed cases per 1k pop (2020−03−25)
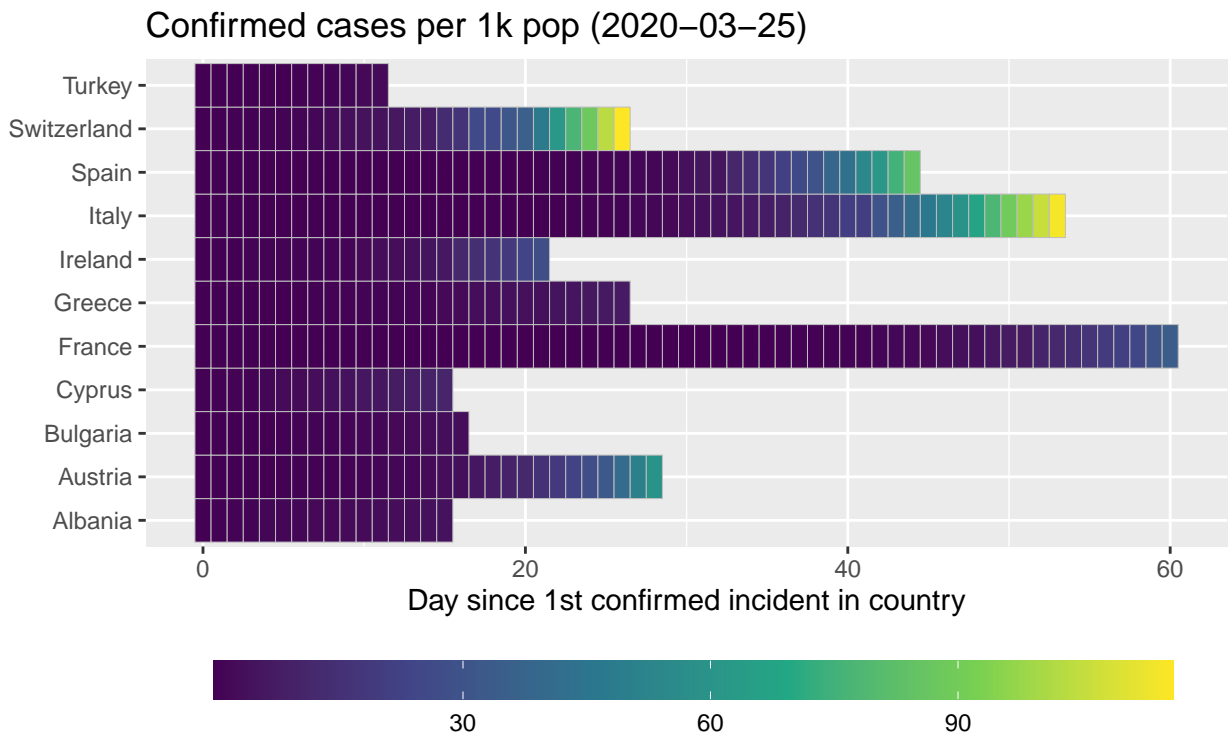
Figure 3: Confirmed Cases by 1000 population

2.2 Deaths

Deaths

Data: 2020−03−24. Scale tranformation: 'Logarithmic'. Intervention points: 'lockdown'.
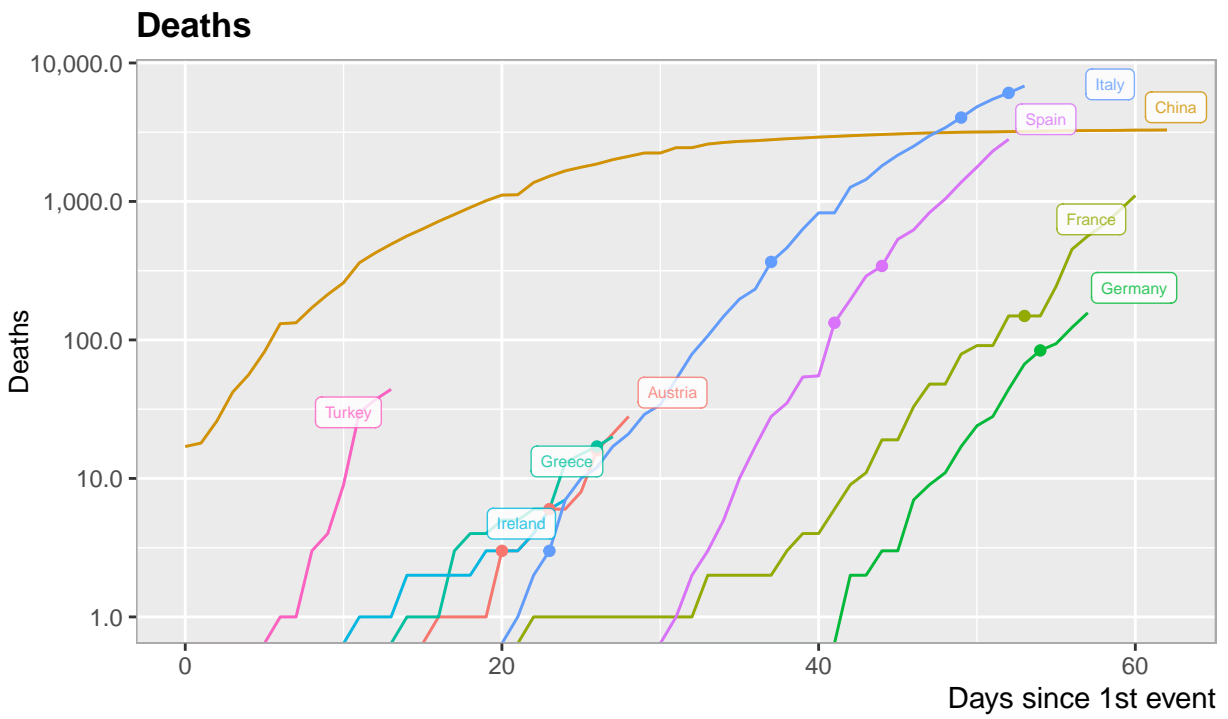
Figure 4: Number of deaths by country

Deaths per 1k pop
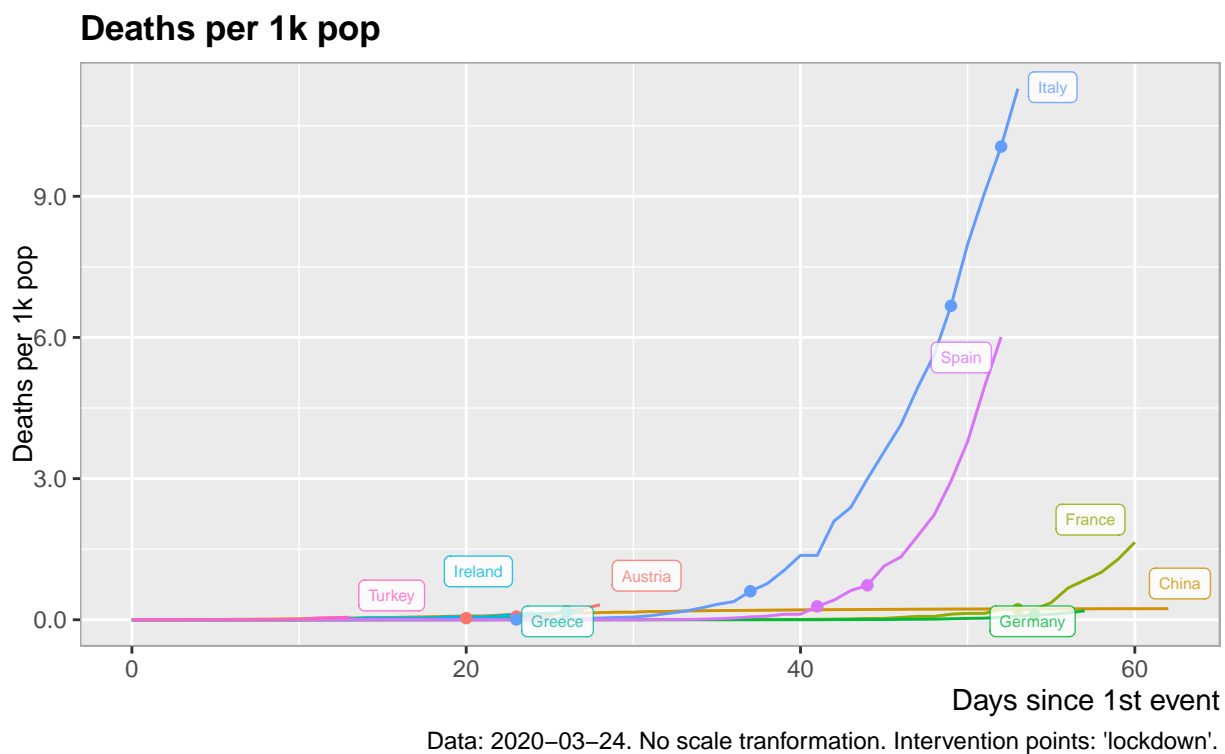

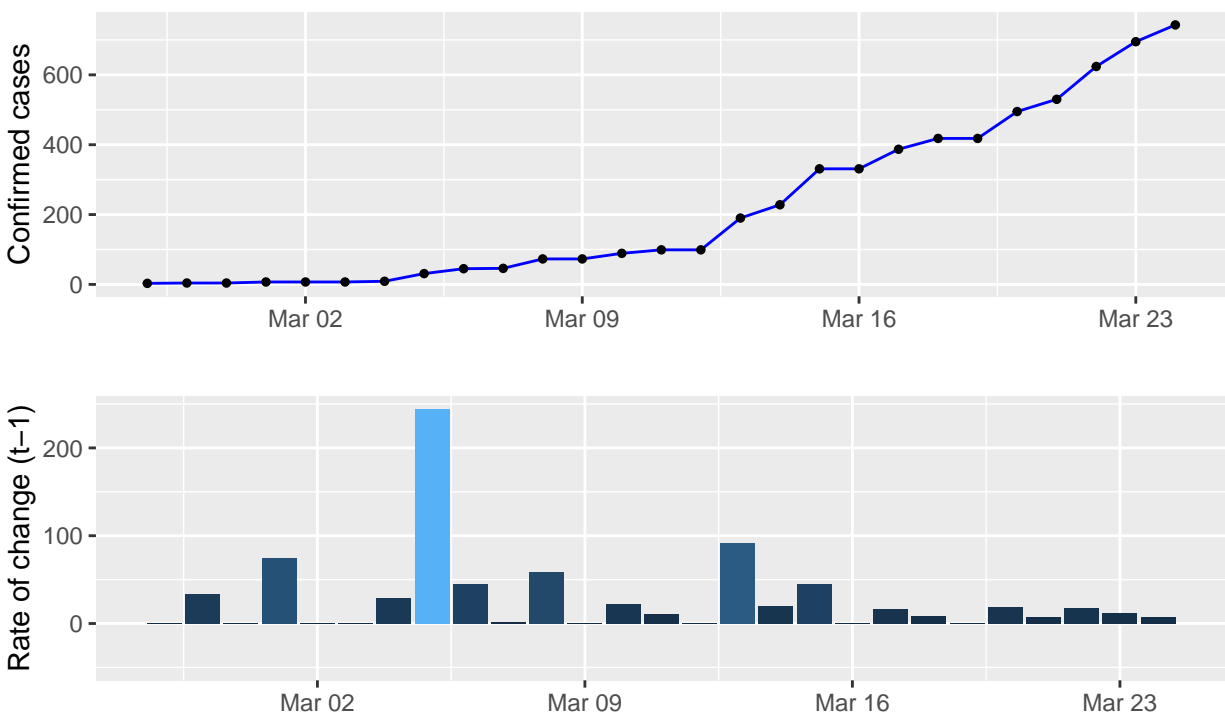Figure 5: Deaths by 1000 population

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
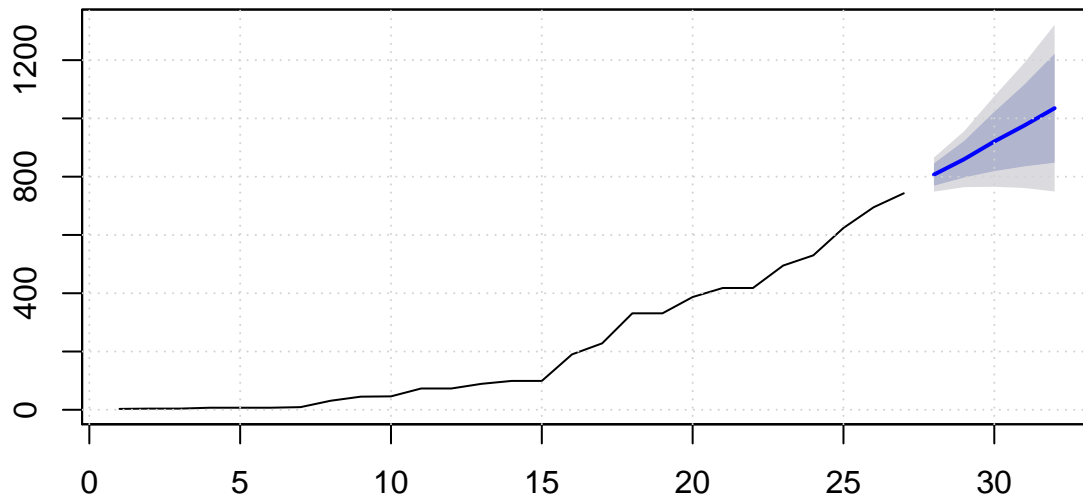
Projection of 'confirmed' cases for 5 ahead

Figure 7: ARIMA projection

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

	Estimation	Confidence 95% (Low)	Confidence 95% (High)
t+1 (2020-03-25)	807.2	748.6	865.8
t+2 (2020-03-26)	860	764.1	955.9
t+3 (2020-03-27)	920.8	765.3	1076
t+4 (2020-03-28)	976	761.1	1191
t+5 (2020-03-29)	1035	749.2	1321

- The estimated proportion of cases detected is 7.4%.

- With data up to 2020-03-24 in Greece we have 743 confirmed cases and 20 deaths.

- Estimated doubling time (based on 5 days time window) is aproximatly 6.4 days
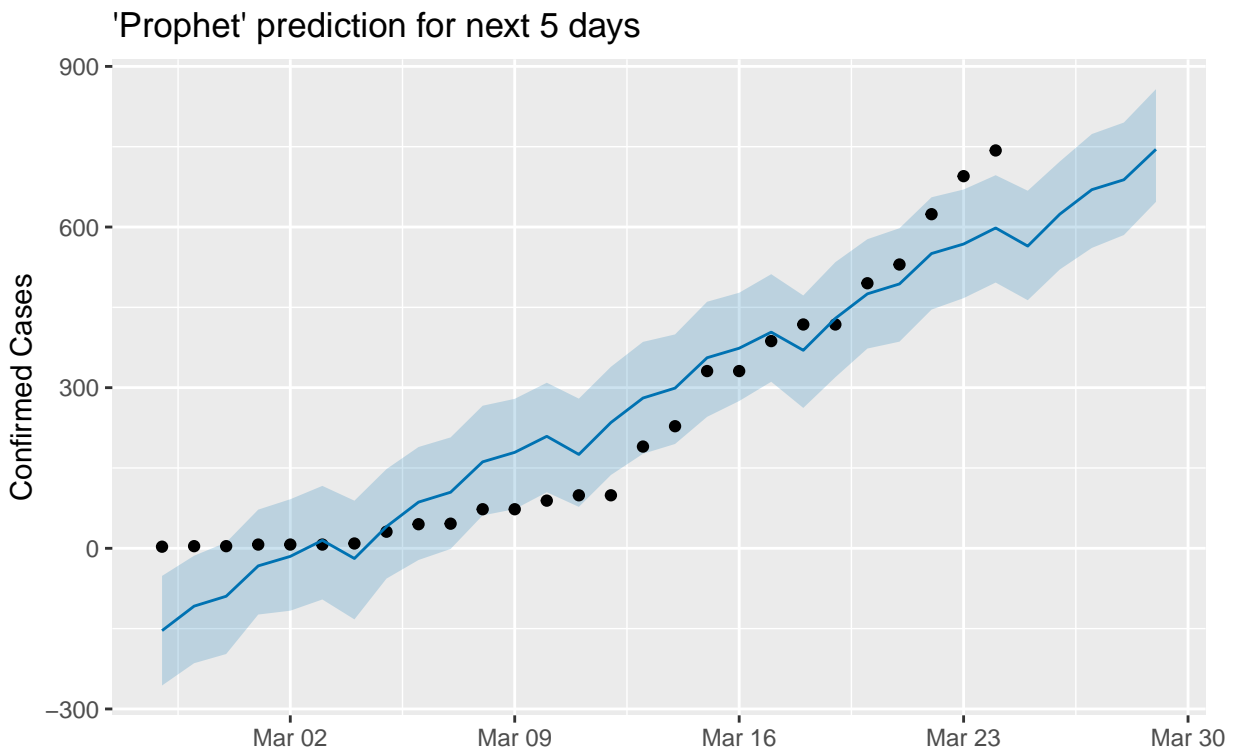
4.2 PROPHET projection

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	2020-03-25	564.4	463.3	667.8
t+2	2020-03-26	624	520.7	722.4
t+3	2020-03-27	669.8	561	773.7
t+4	2020-03-28	688.3	585.1	795.2
t+5	2020-03-29	745.1	647	857.5