Covid19 Report

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Contents

1 The *CRISTINA* project

This report is part of a research project "**CoR**ona 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.
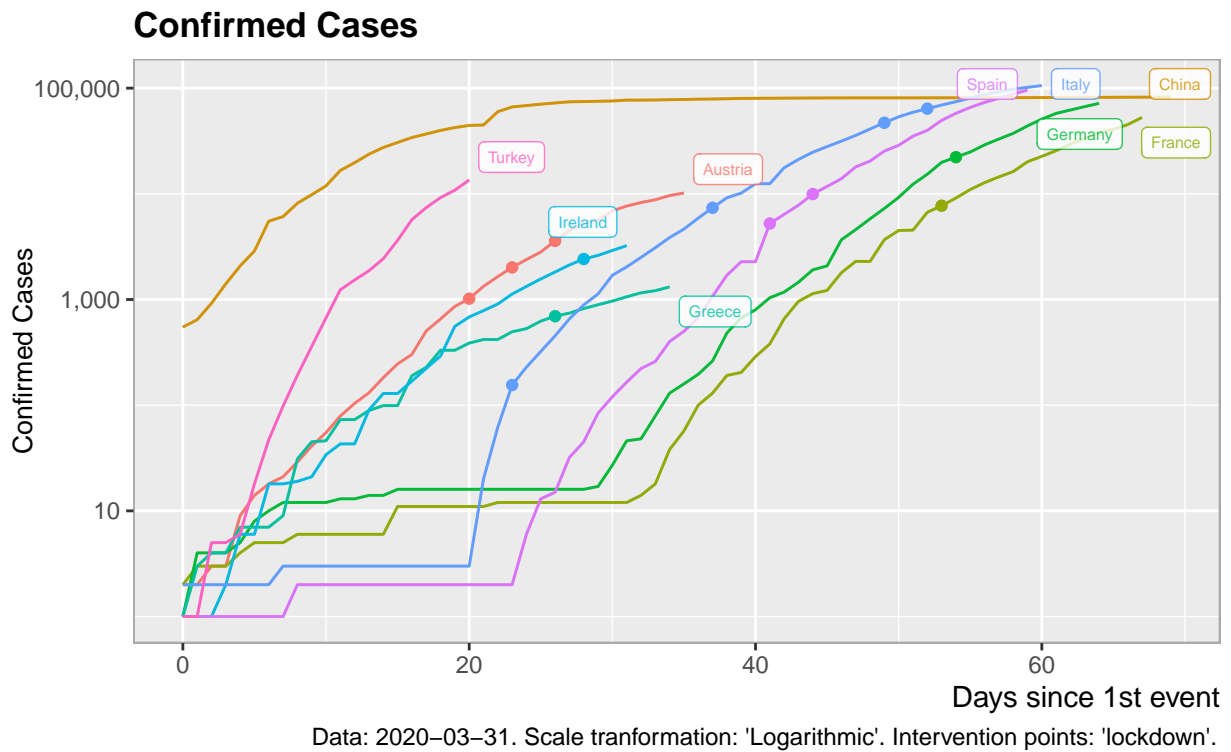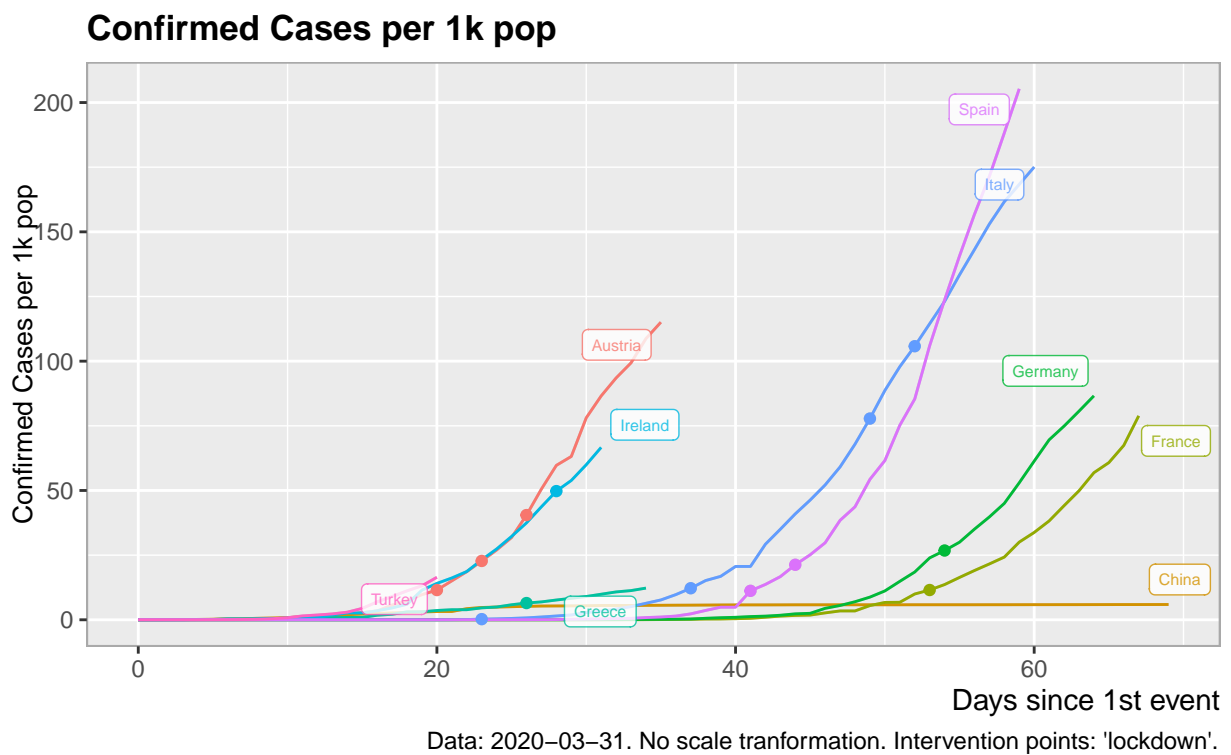
2.1 Confirmed Cases

Confirmed Cases

Data: 2020−03−31. Scale tranformation: 'Logarithmic'. Intervention points: 'lockdown'.

Figure 1: Confirmed Cases

Confirmed Cases per 1k pop

Data: 2020−03−31. No scale tranformation. Intervention points: 'lockdown'.

Figure 2: Confirmed Cases by 1000 population

Confirmed cases per 1k pop (2020−04−01)
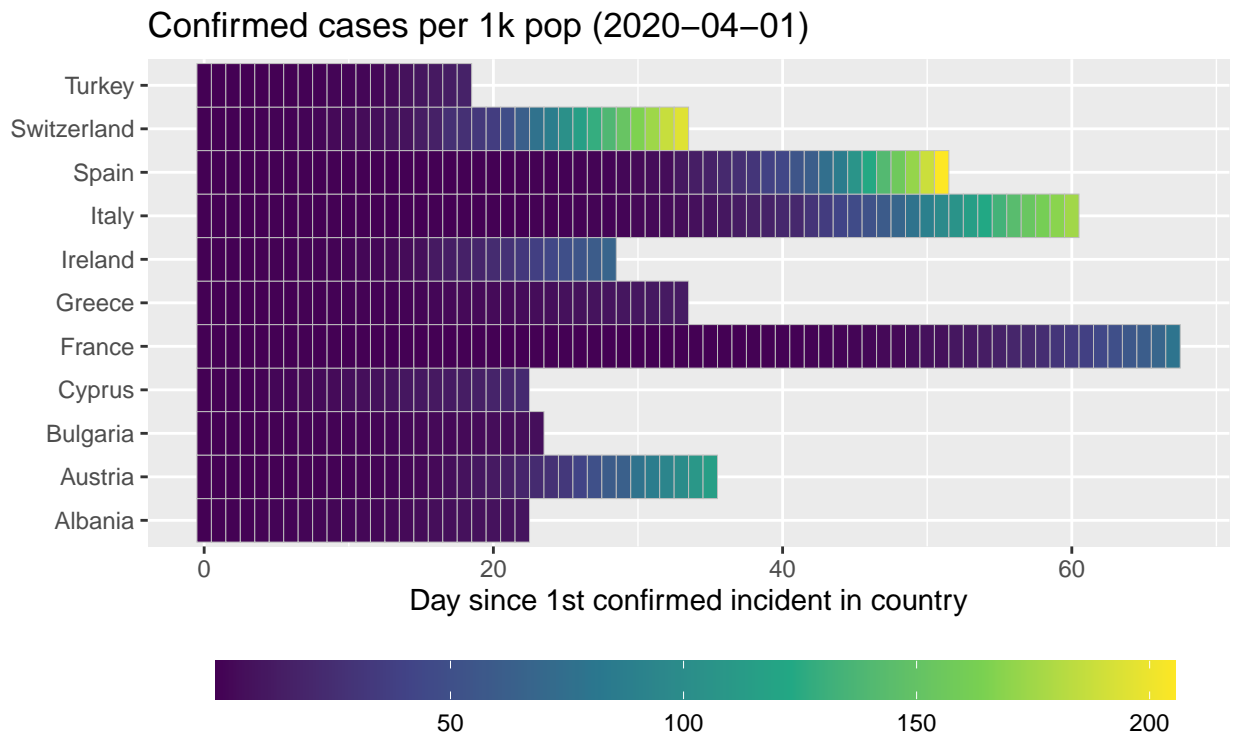
Figure 3: Confirmed Cases by 1000 population

2.2 Deaths

Deaths

Data: 2020−03−31. Scale tranformation: 'Logarithmic'. Intervention points: 'lockdown'.

Figure 4: Number of deaths by country

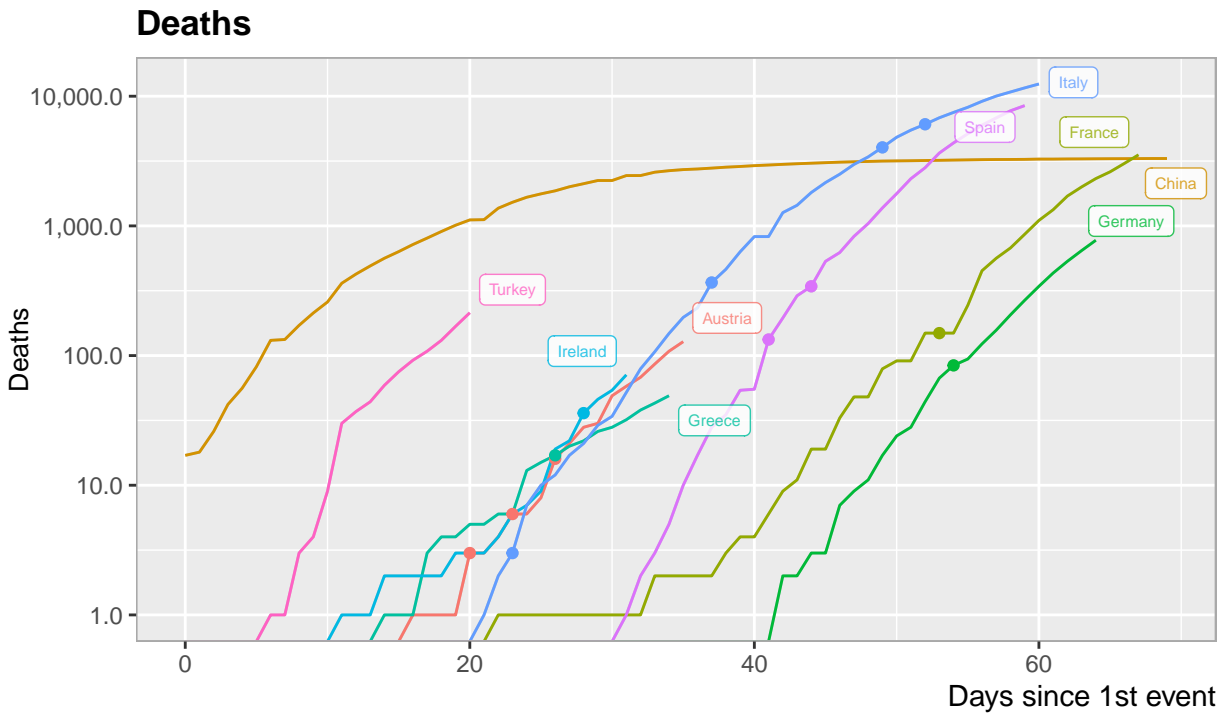**Deaths per 1k pop**

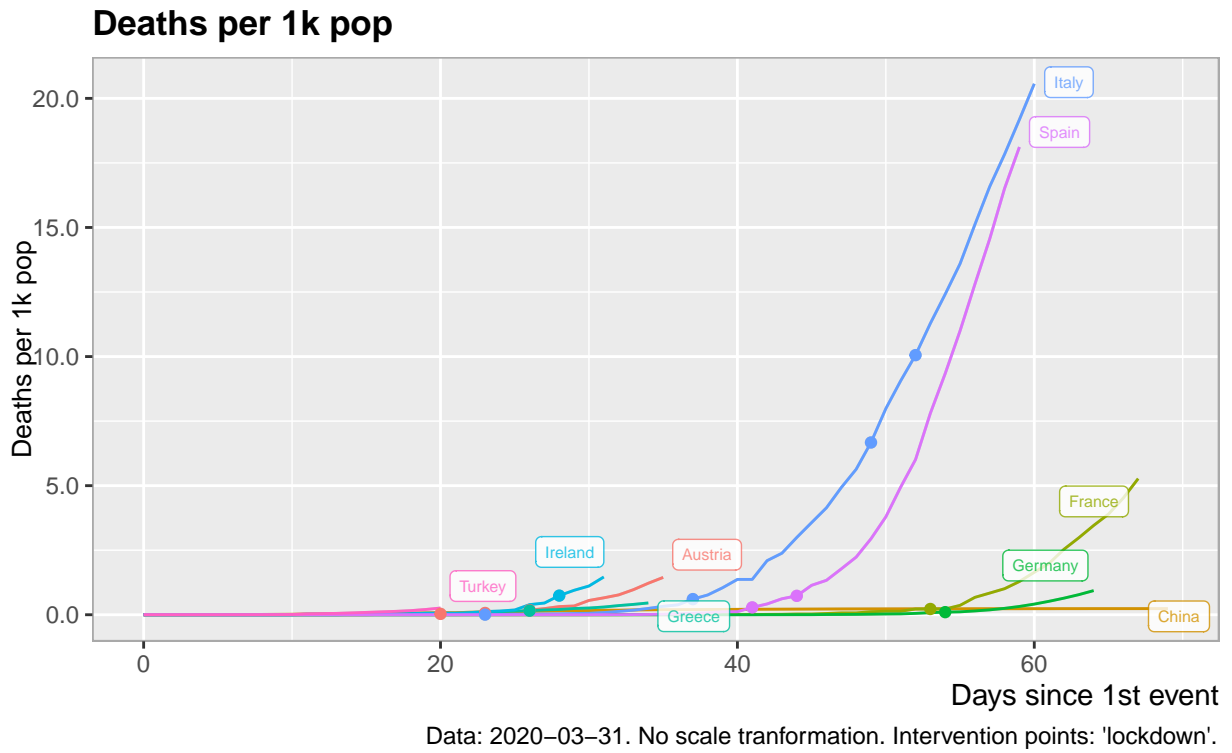Data: 2020−03−31. No scale tranformation. Intervention points: 'lockdown'.

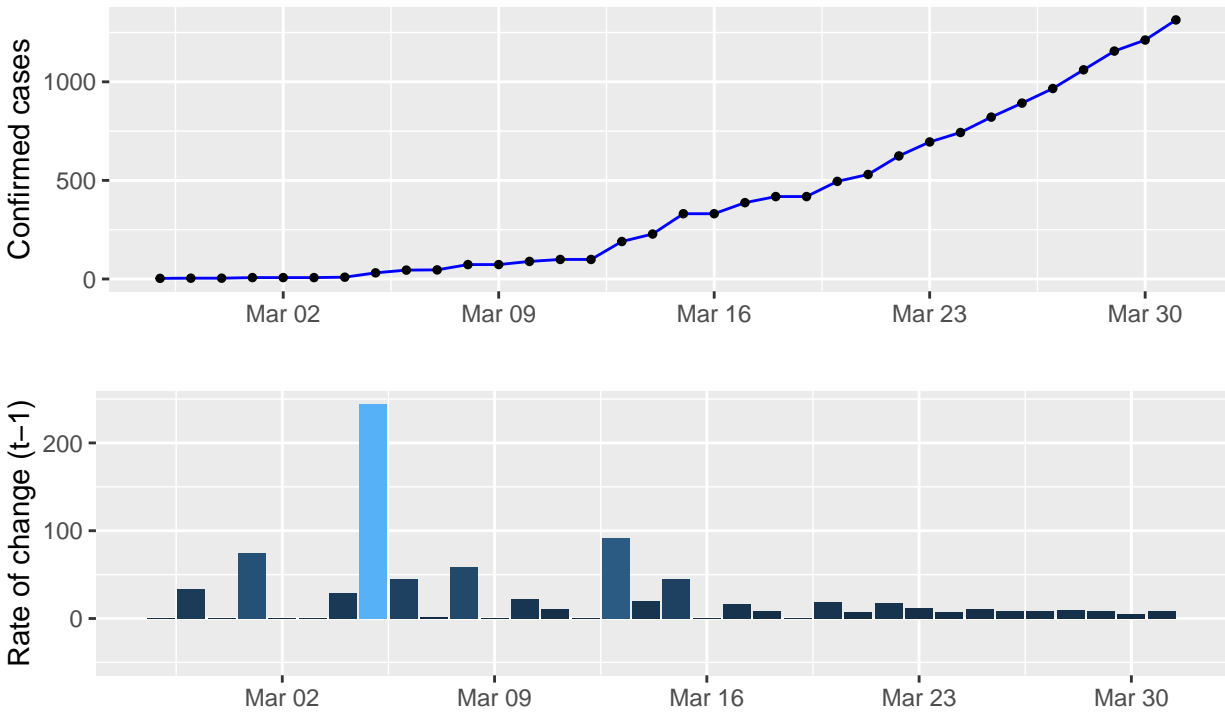Figure 5: Deaths by 1000 population

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
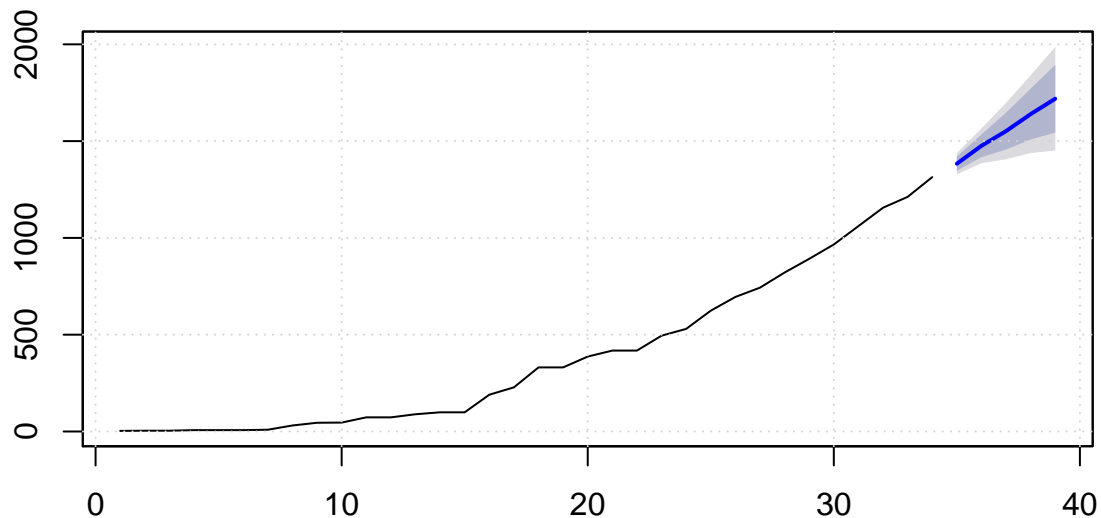
Projection of 'confirmed' cases for 5 ahead

Figure 7: ARIMA projection

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

	Estimation	Confidence 95% (Low)	Confidence 95% (High)
t+1 (2020-04-01)	1383	1328	1438
t+2 (2020-04-02)	1476	1386	1566
t+3 (2020-04-03)	1552	1406	1698
t+4 (2020-04-04)	1640	1439	1841
t+5 (2020-04-05)	1719	1451	1987

- The estimated proportion of cases detected is 11.98%.

- With data up to 2020-03-31 in Greece we have 1314 confirmed cases and 49 deaths.

- Estimated doubling time (based on 5 days time window) is aproximatly 9.3 days
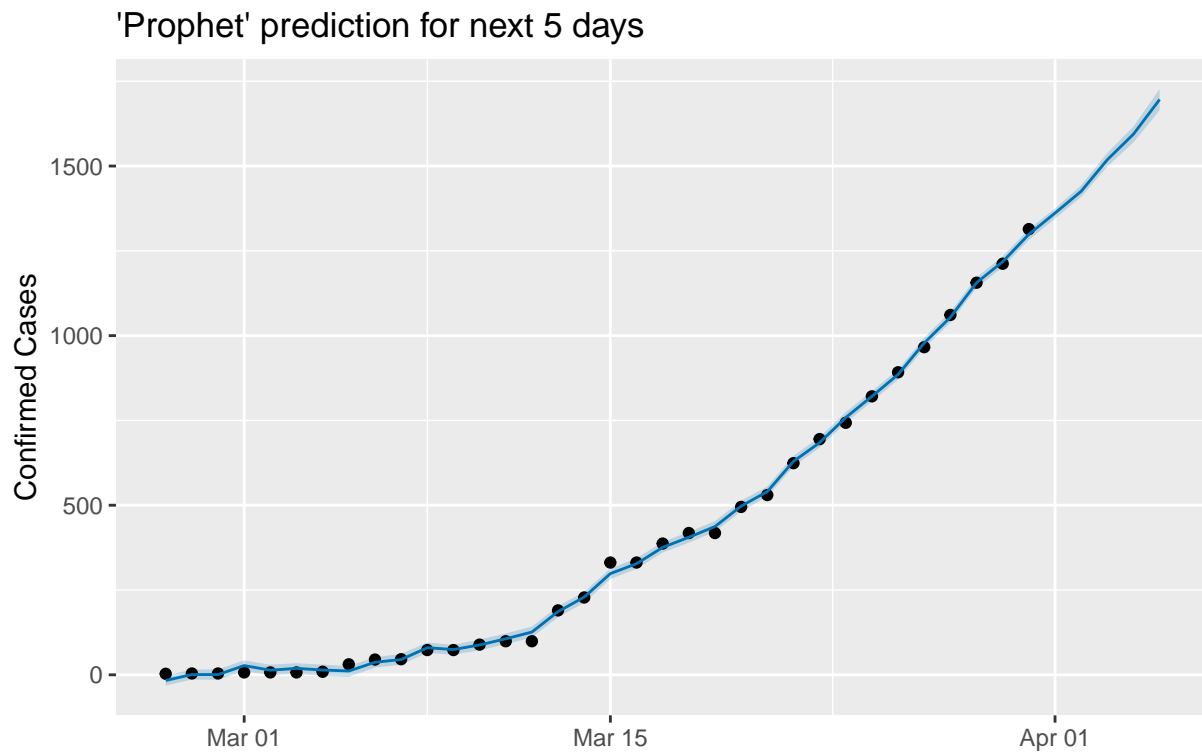
4.2   PROPHET projection

'Prophet' prediction for next 5 days

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	2020-04-01	1361	1345	1375
t+2	2020-04-02	1426	1409	1443
t+3	2020-04-03	1519	1498	1539
t+4	2020-04-04	1594	1570	1617
t+5	2020-04-05	1696	1664	1727