

Effect of income inequality on the first wave of the COVID-19 pandemic: Evidence from European countries

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Background

From infectious diseases and pandemics (Spanish flu, SARS): Inequity is related to higher rates of infection and death.

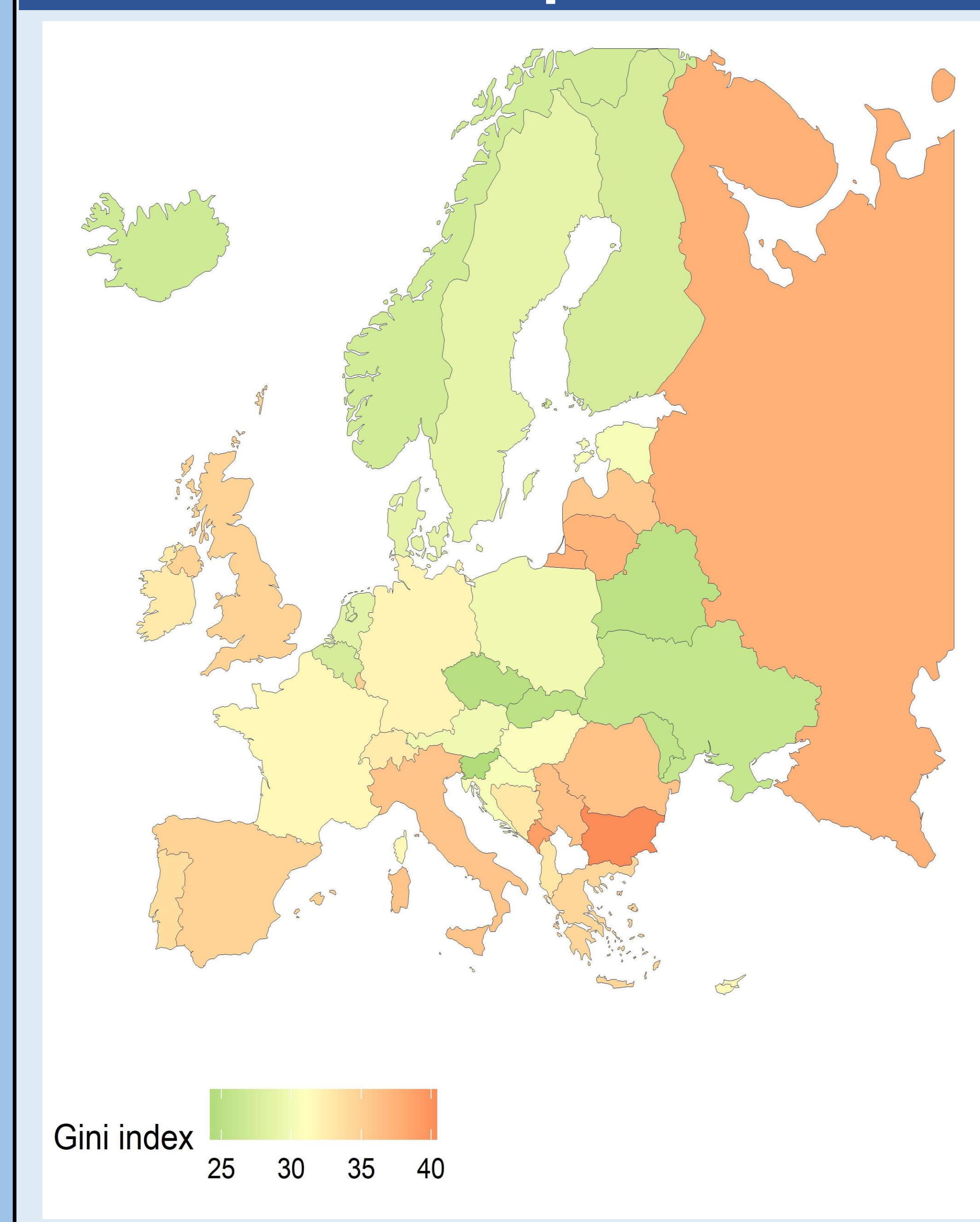
Research question

Has income inequality in European countries exacerbated COVID's impact?

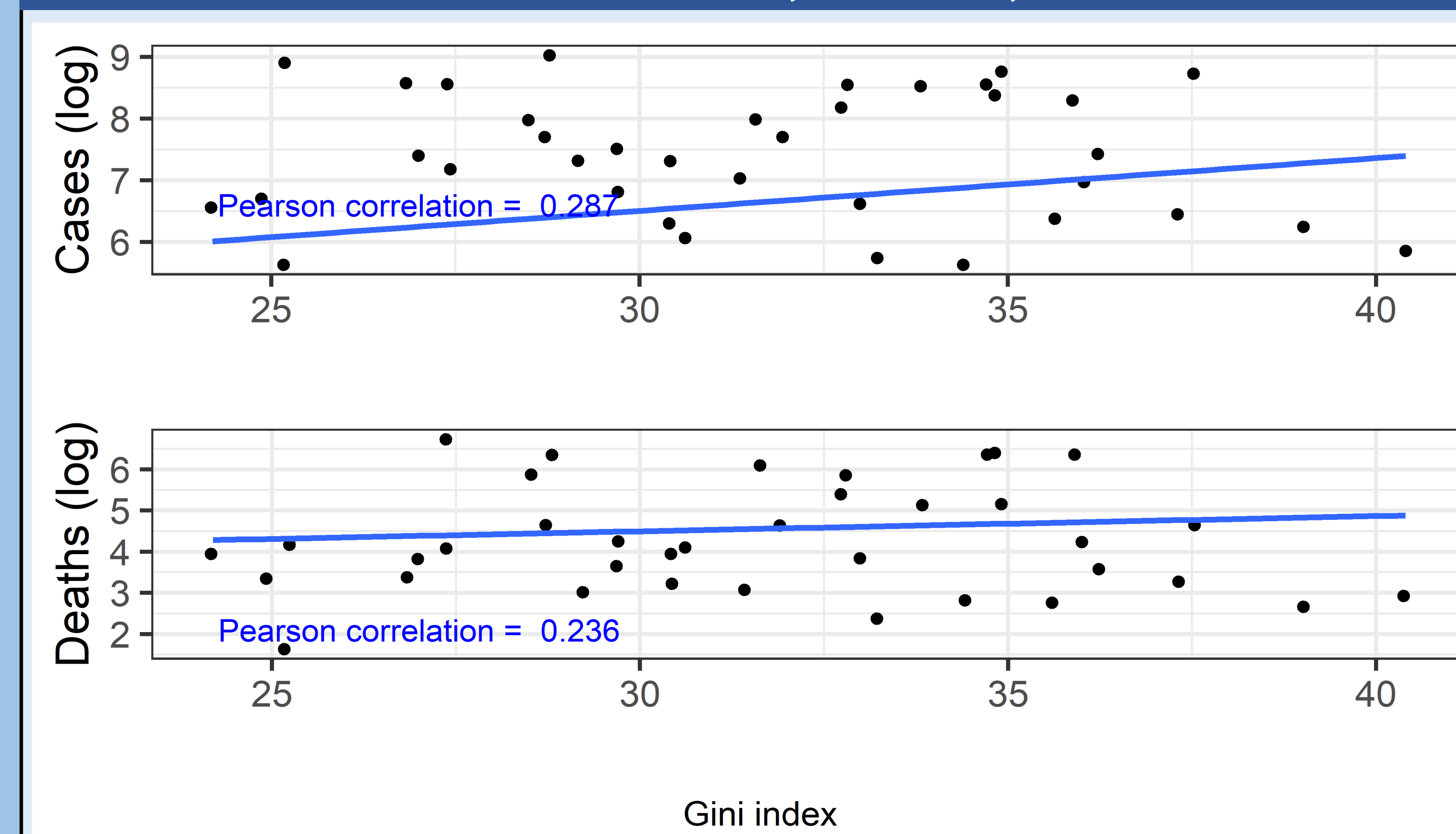
Data and methods

- 37 European countries.
- Estimation of the duration of the first wave individually in each country.
- Quasi-poisson regressions including log of population as offset.

Gini index in European countries



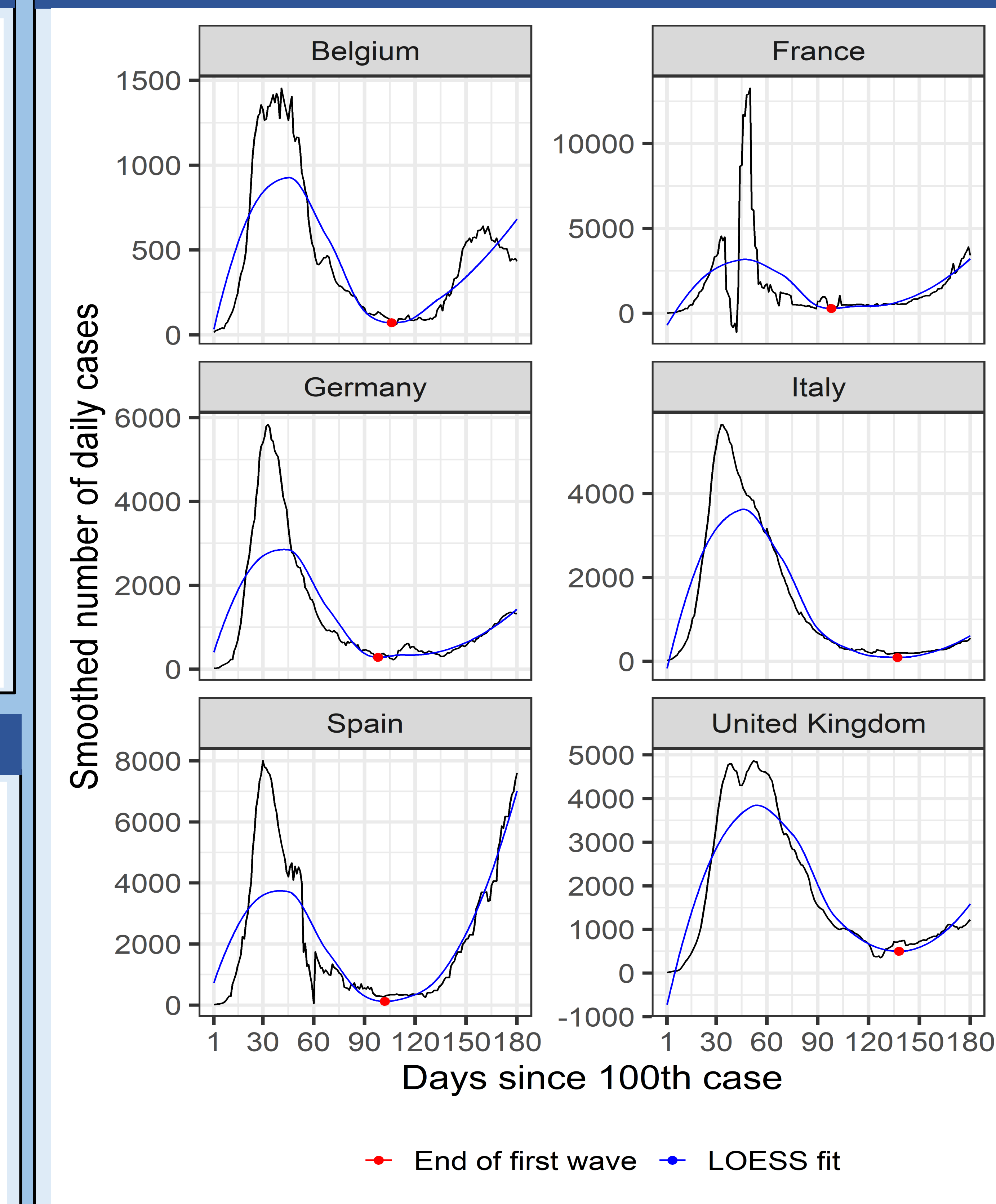
Association between cases, deaths, and Gini index



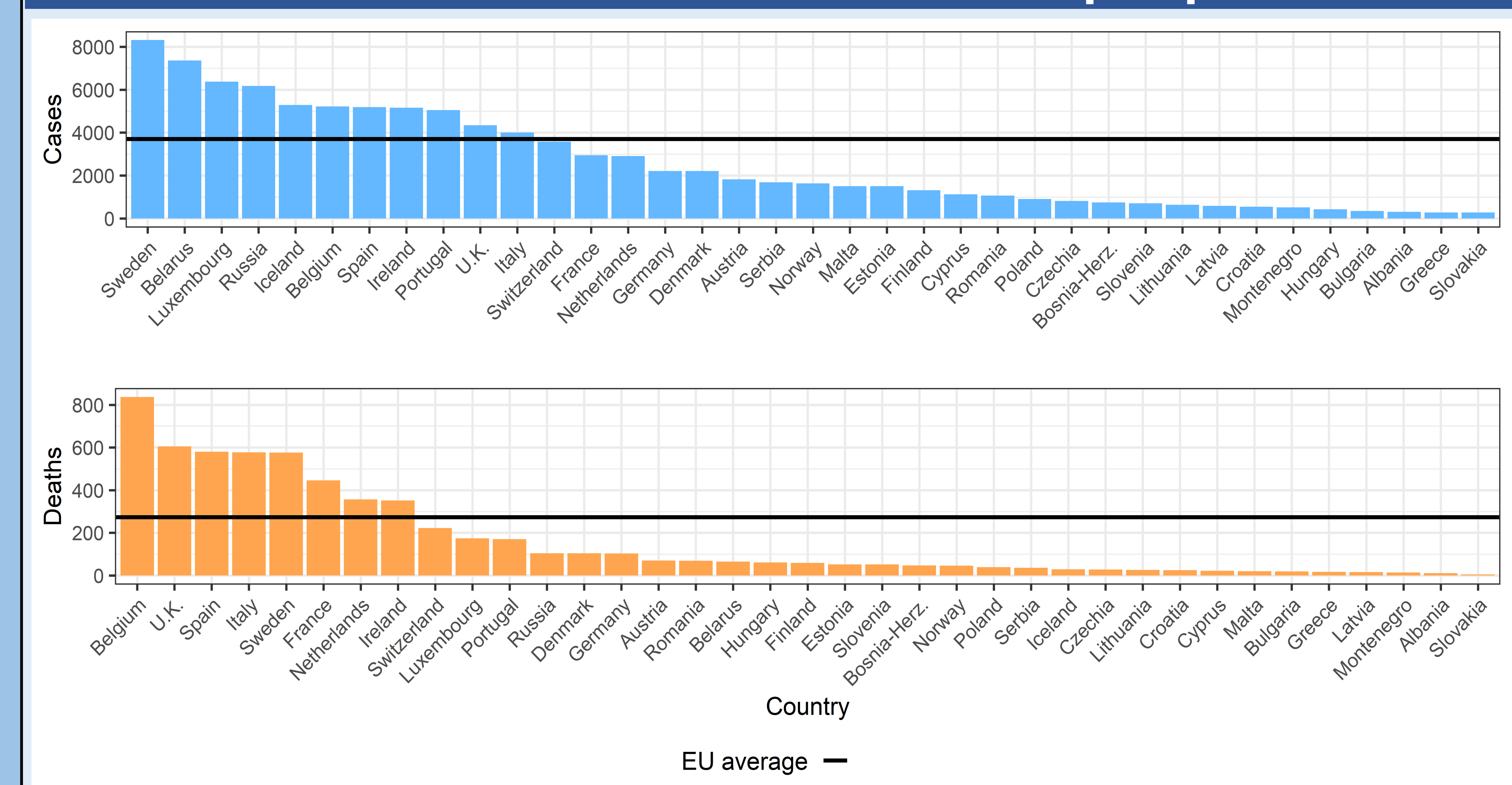
Per capita risk of the number of cases and deaths

Variable	Cases		Deaths		Cases		Deaths	
	[1]	95% CI	[2]	95% CI	[3]	95% CI	[4]	95% CI
Gini	1.08	1.03 - 1.14	1.03	0.97 - 1.08	1.01	0.93 - 1.10	1.04	0.96 - 1.13
Education			0.98	0.97 - 0.99			0.97	0.95 - 0.99
Workers			1.05	1.01 - 1.10			1.02	0.95 - 1.09
65+			0.86	0.81 - 0.92			1.11	1.01 - 1.21
Urbanization			1.03	1.01 - 1.06			1.05	1.02 - 1.09
Flights			1.17	1.02 - 1.37			1.23	0.99 - 1.63
Physicians			1.32	1.06 - 1.66			0.60	0.43 - 0.81
Beds			0.99	0.98 - 1.00			0.99	0.98 - 0.99
Lockdown			1.01	1.00 - 1.02			1.00	0.99 - 1.02
Goodness of fit								
Deviance	704,869.71		212,010.2		147,246.63		22,370.63	
Dispersion	20,177.68		7,466.35		4,126.82		845.78	
Chi sq.	706,218.67		201,591.43		144,438.64		22,836.02	

Duration of the first wave



Cumulative number of infections and deaths p.m.p



Conclusions

- Moderate association between the Gini index and the cumulative number of infections and deaths.
- Relations become weaker when controls are included.
- Higher number of infections and deaths are strongly associated with more essential workers, larger elderly population and weaker healthcare capacity.