

Branching stochastic processes as models of Covid-19 epidemic development

Var199 - week 53

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Abstract

The results presented here are obtained using the methodology proposed in the paper <https://arxiv.org/abs/2004.14838> for the country Var199. The data comes from European Centre for Disease Prevention and Control available at <https://opendata.ecdc.europa.eu/covid19/casedistribution/csv>.

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Chapter 1. Observed Infection data

Figure 1.1. Number of the weekly reported laboratory-confirmed cases

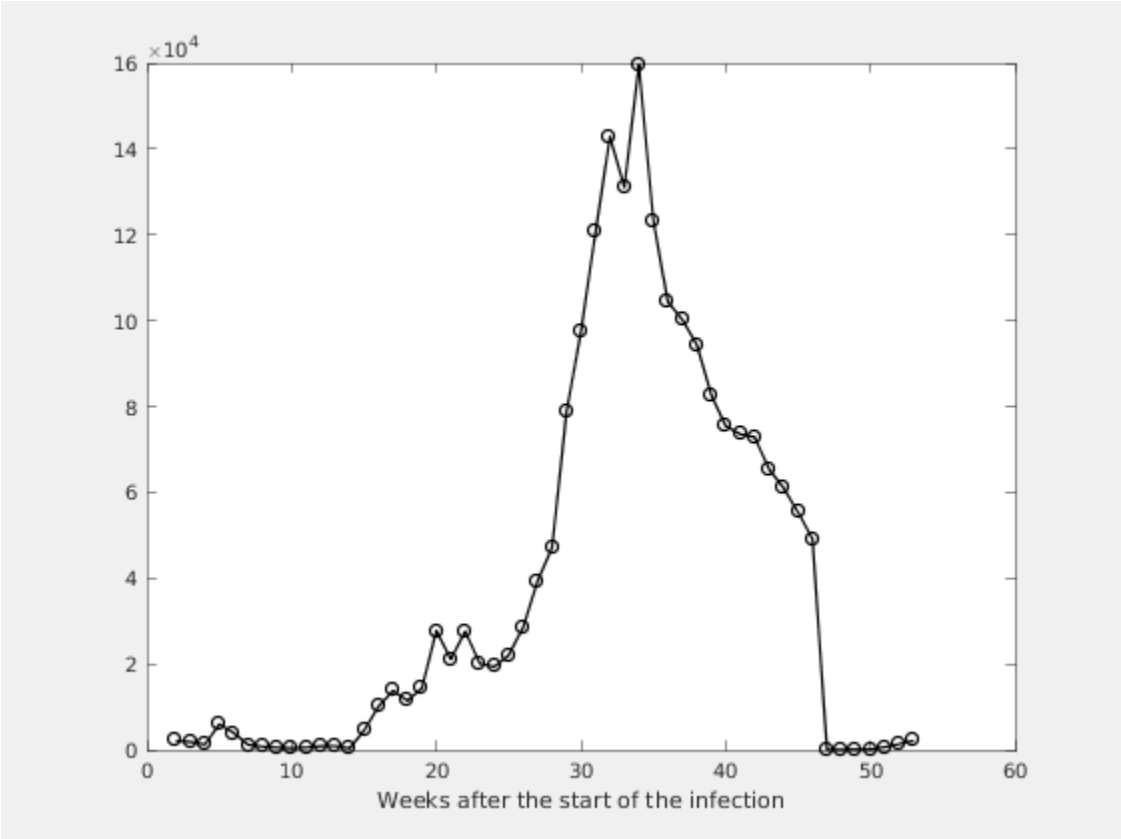
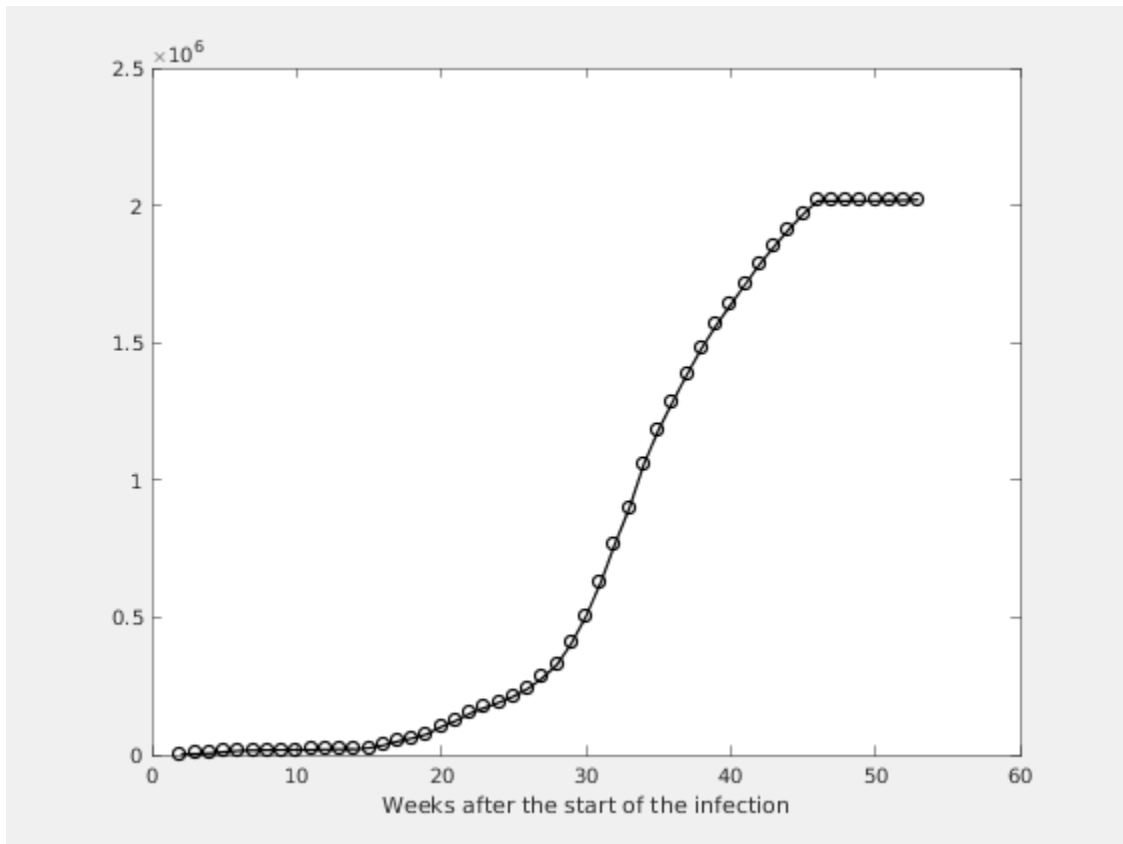


Figure 1.2. Number of the total registered cases



Chapter 2. Estimating of the main parameter and some predictions

Figure 2.1. The Lotka-Nagaev and the Harris type estimator of the growth rate

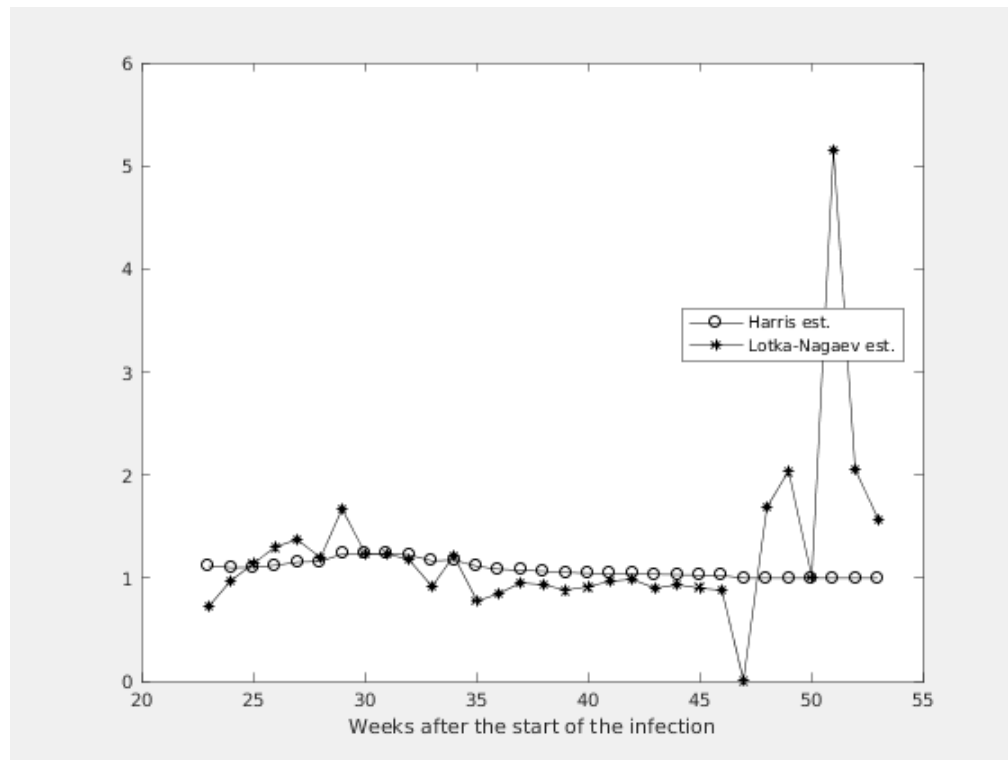


Figure 2.2. Figure

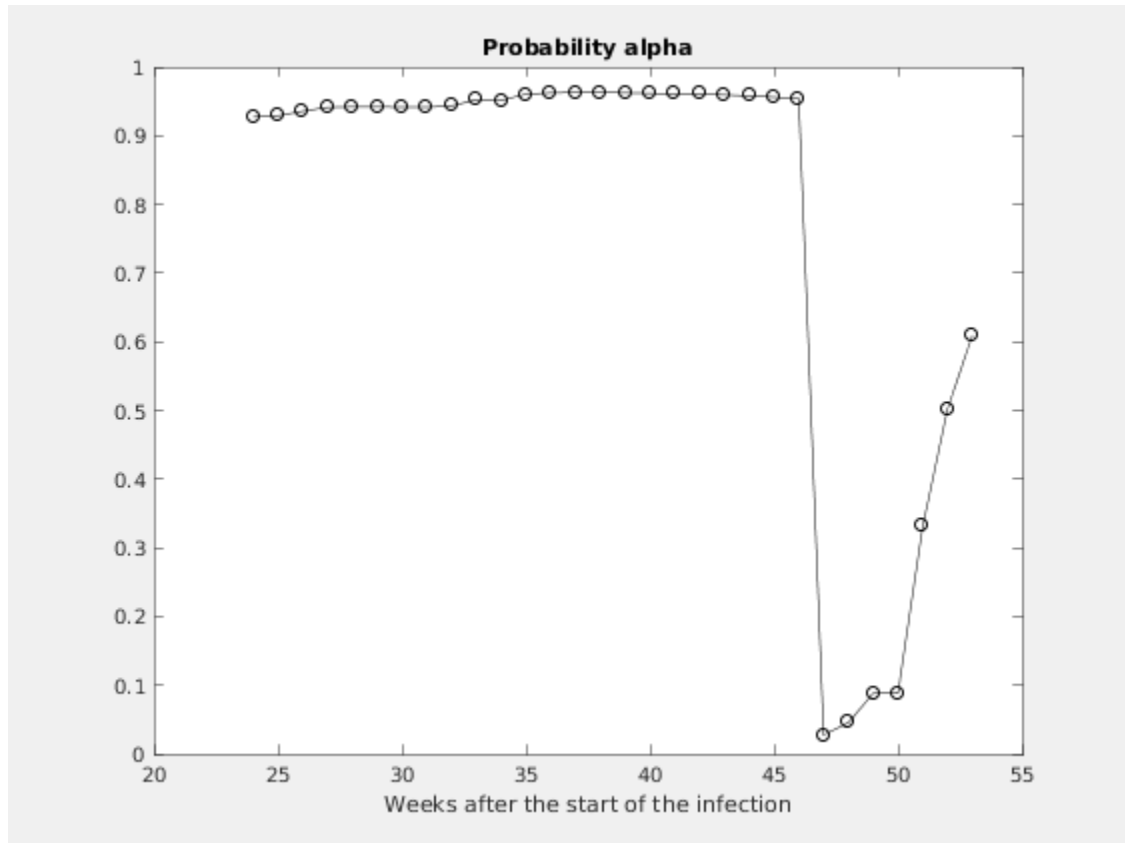


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

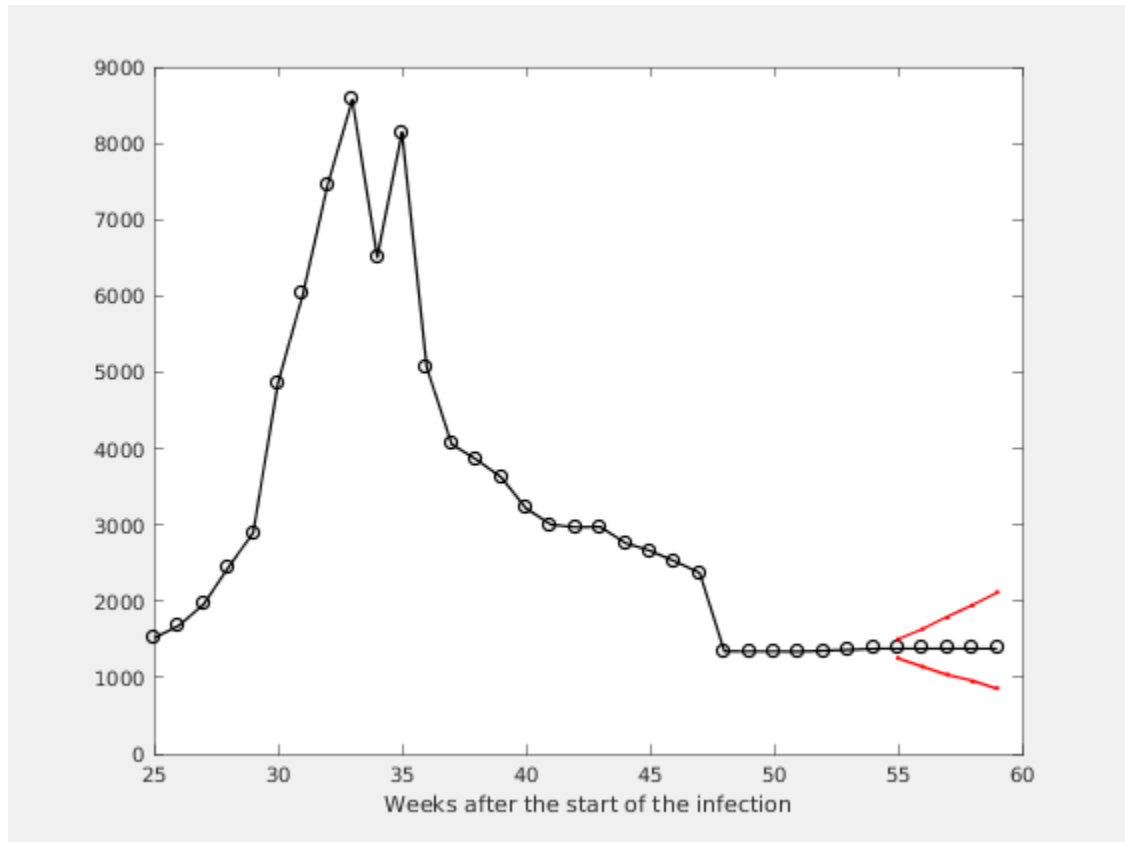
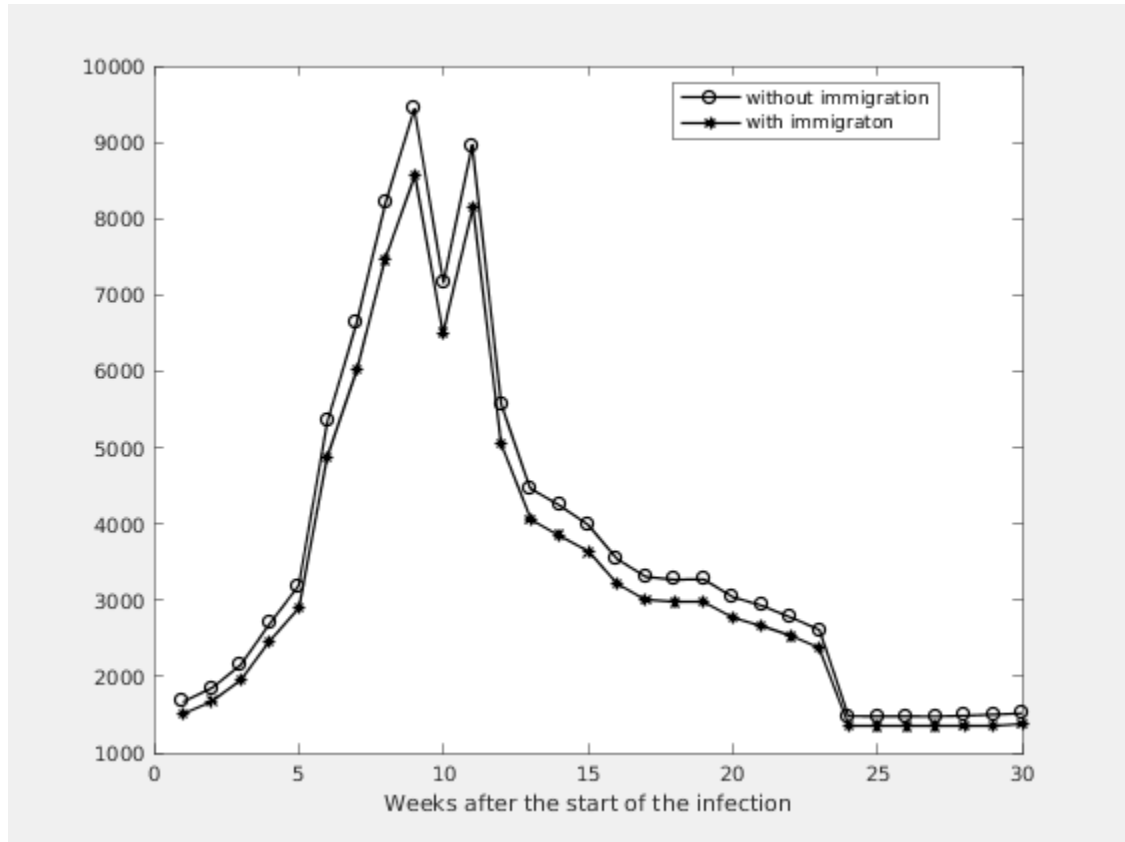


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	0.9990	0.9043 - 1.0938	0.0275	1344	1480
3	0.9990	0.9053 - 1.0927	0.0455	1343	1479
2	0.9993	0.9066 - 1.0920	0.0882	1343	1479
1	0.9996	0.9079 - 1.0914	0.0883	1342	1477
0	1.0000	0.9087 - 1.0913	0.3316	1351	1487