

Branching stochastic processes as models of Covid-19 epidemic development

Var154 - 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 Var154. 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

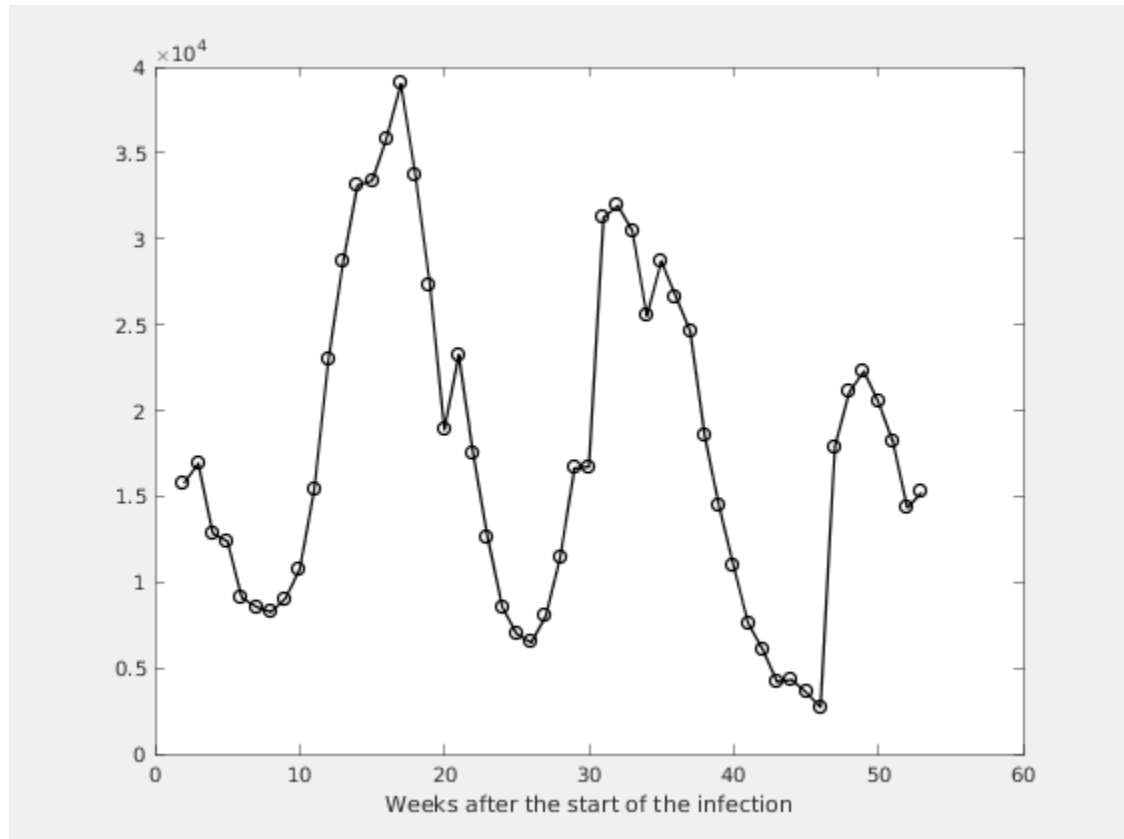
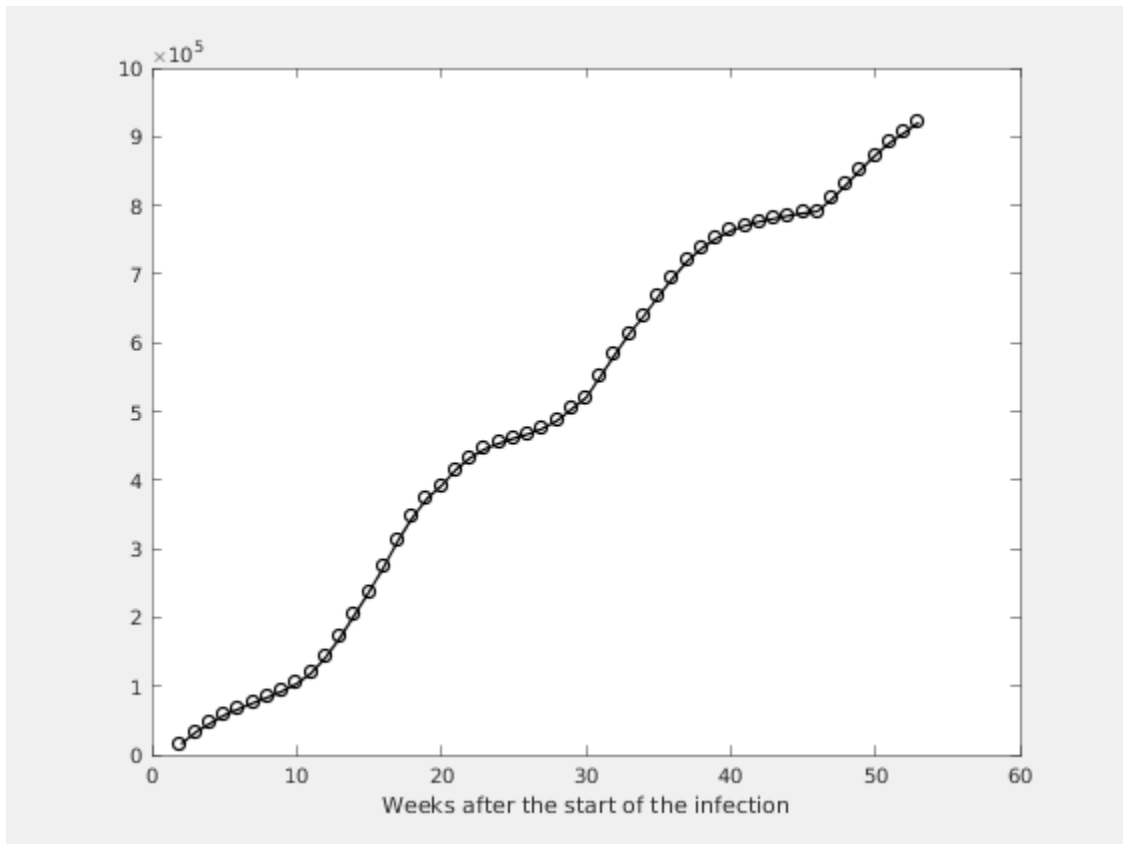


Figure 1.2. Number of the total registered cases



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

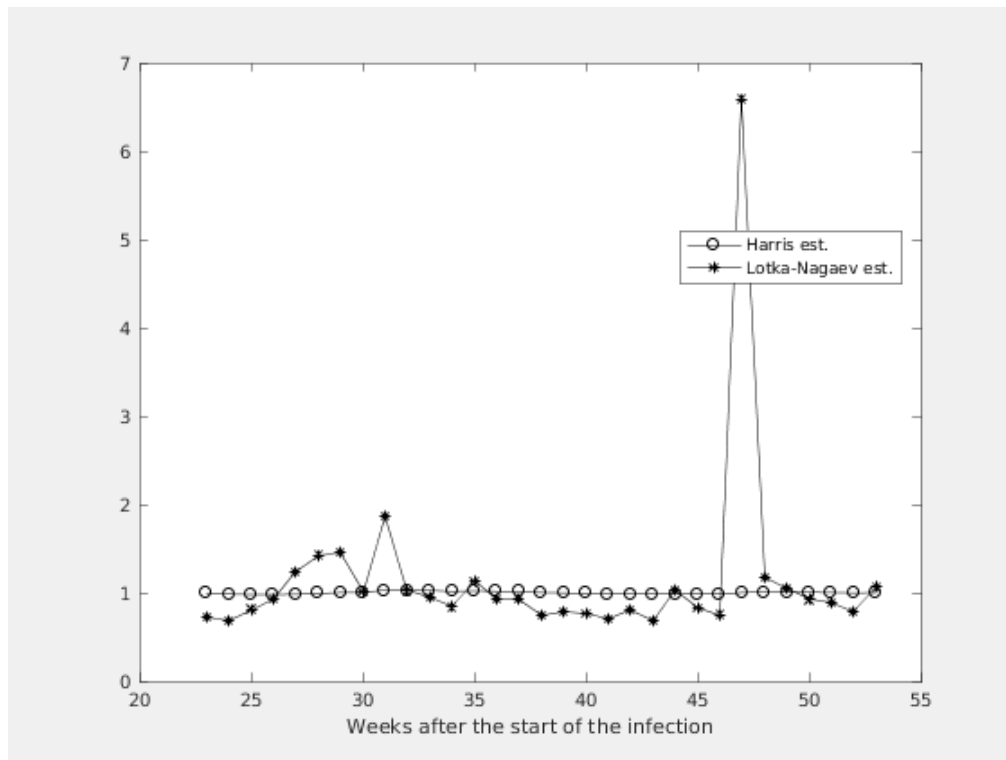


Figure 2.2. Figure

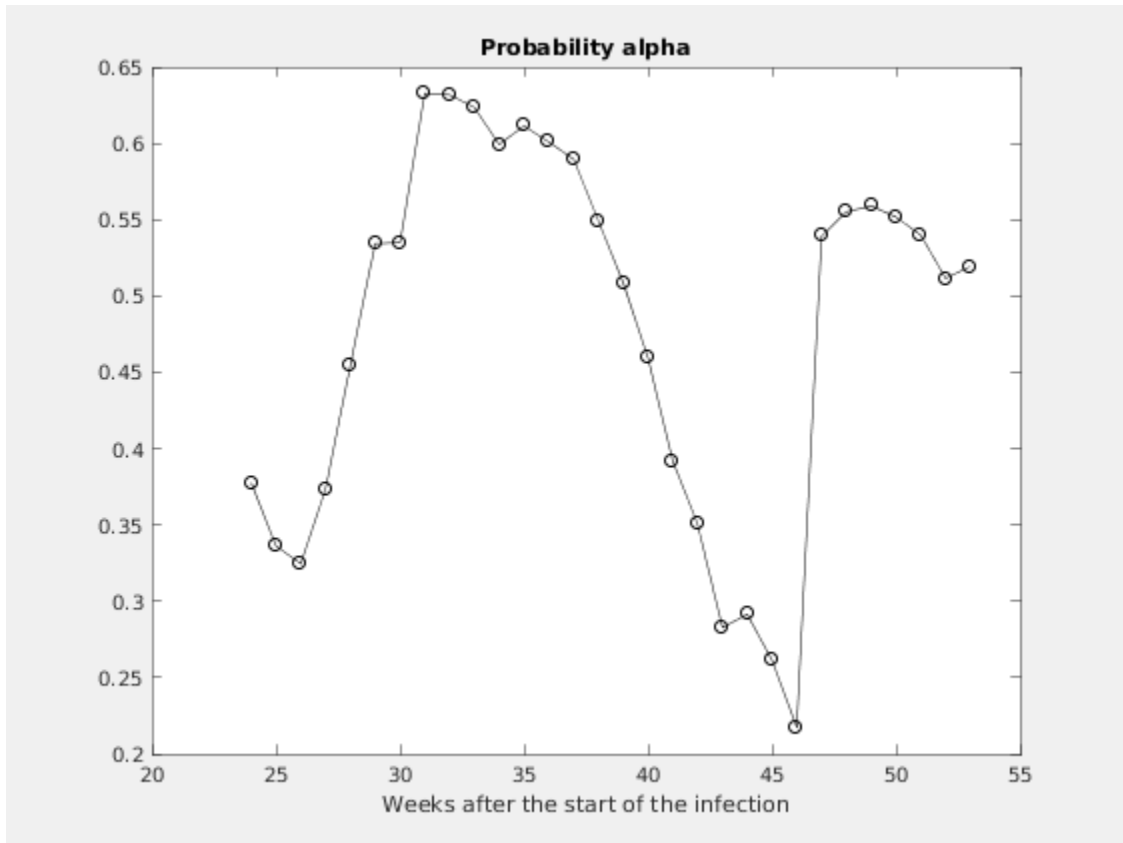


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

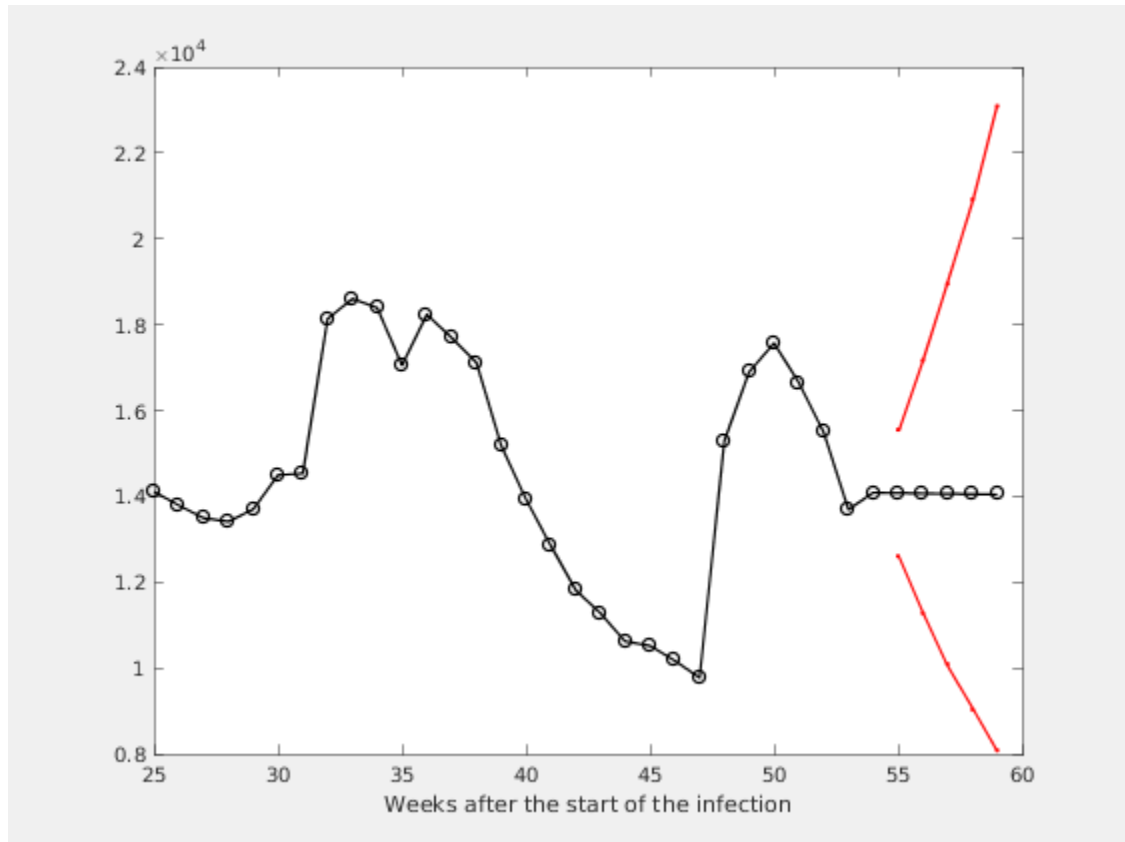
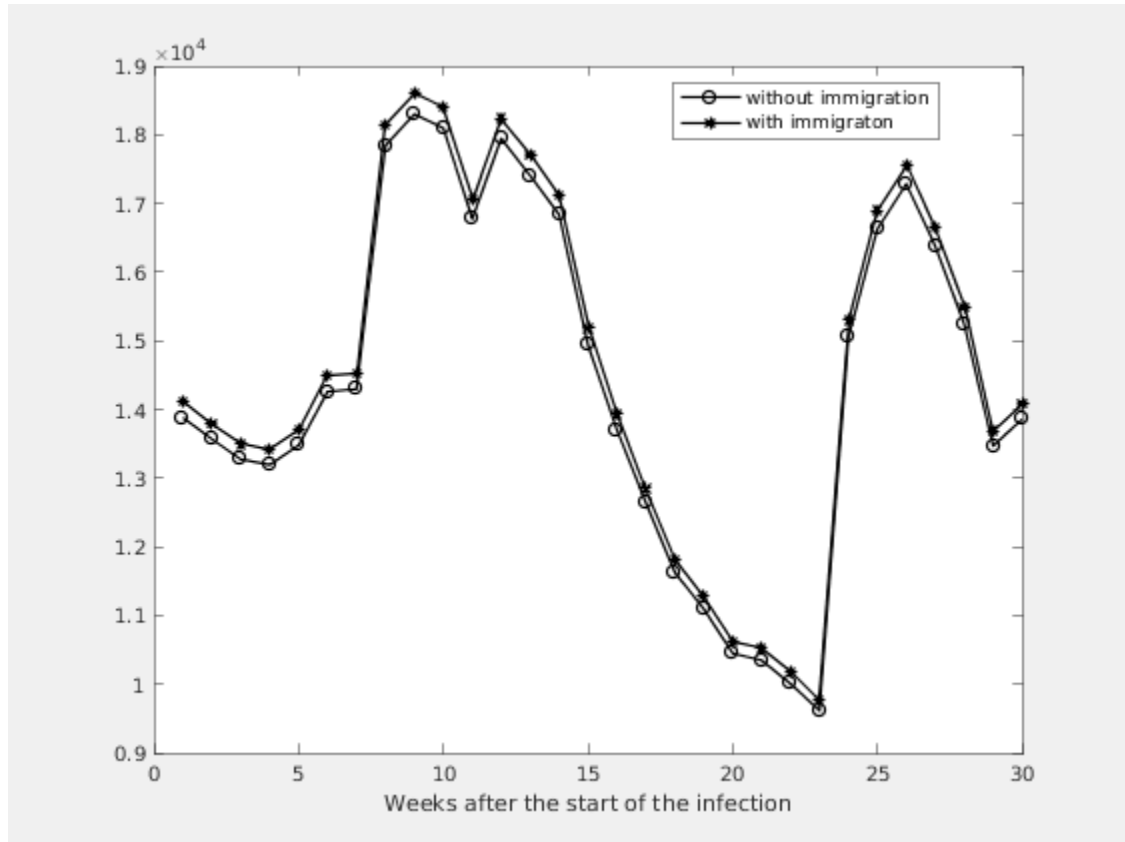


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	1.0078	0.8896 - 1.1260	0.5391	15298	15050
3	1.0055	0.8897 - 1.1214	0.5552	16899	16626
2	1.0028	0.8896 - 1.1159	0.5590	17567	17283
1	0.9984	0.8878 - 1.1090	0.5517	16651	16381
0	0.9994	0.8911 - 1.1077	0.5399	15495	15244