

Branching stochastic processes as models of Covid-19 epidemic development

Var143 - 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 Var143. 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

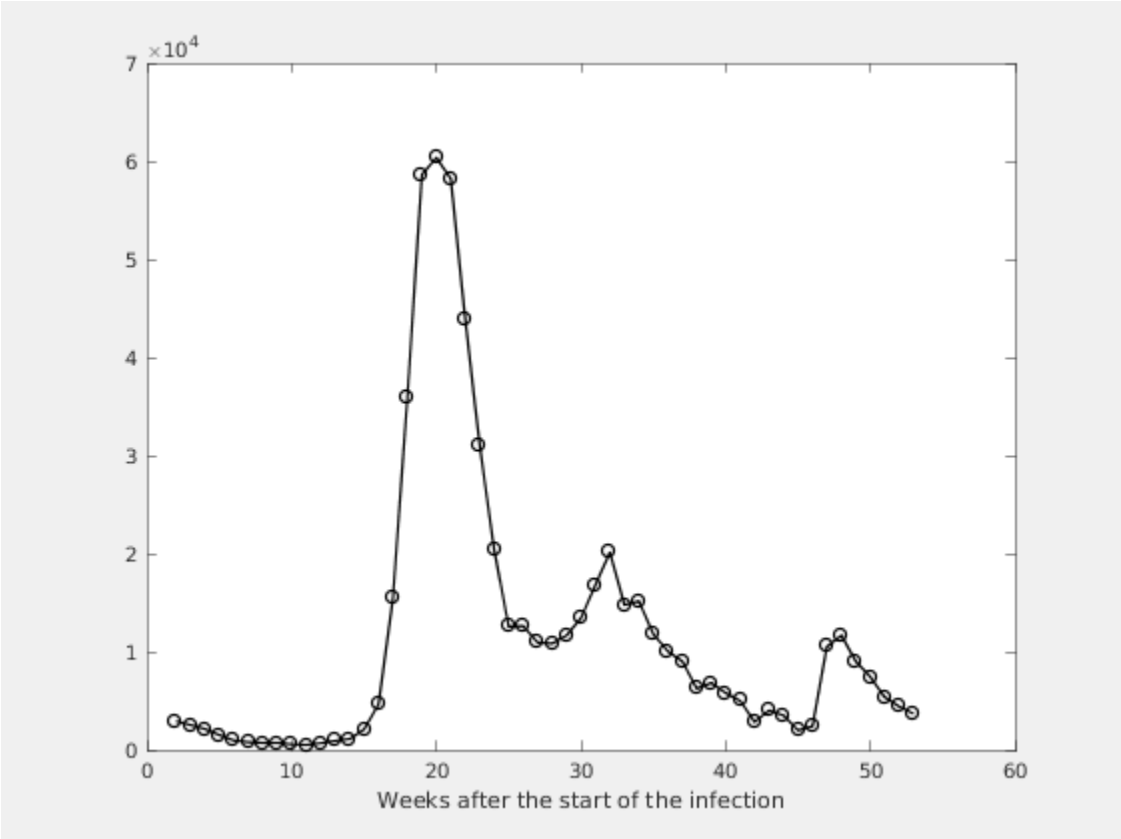
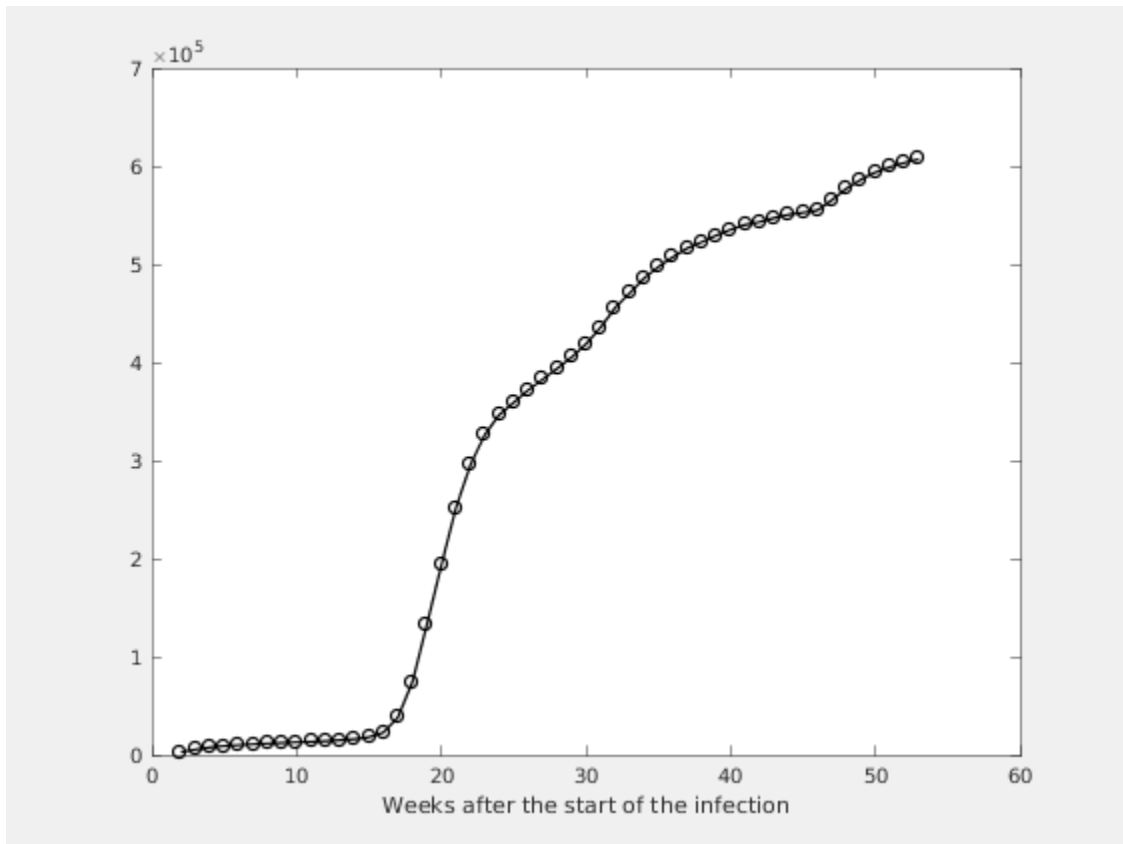


Figure 1.2. Number of the total registered cases



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

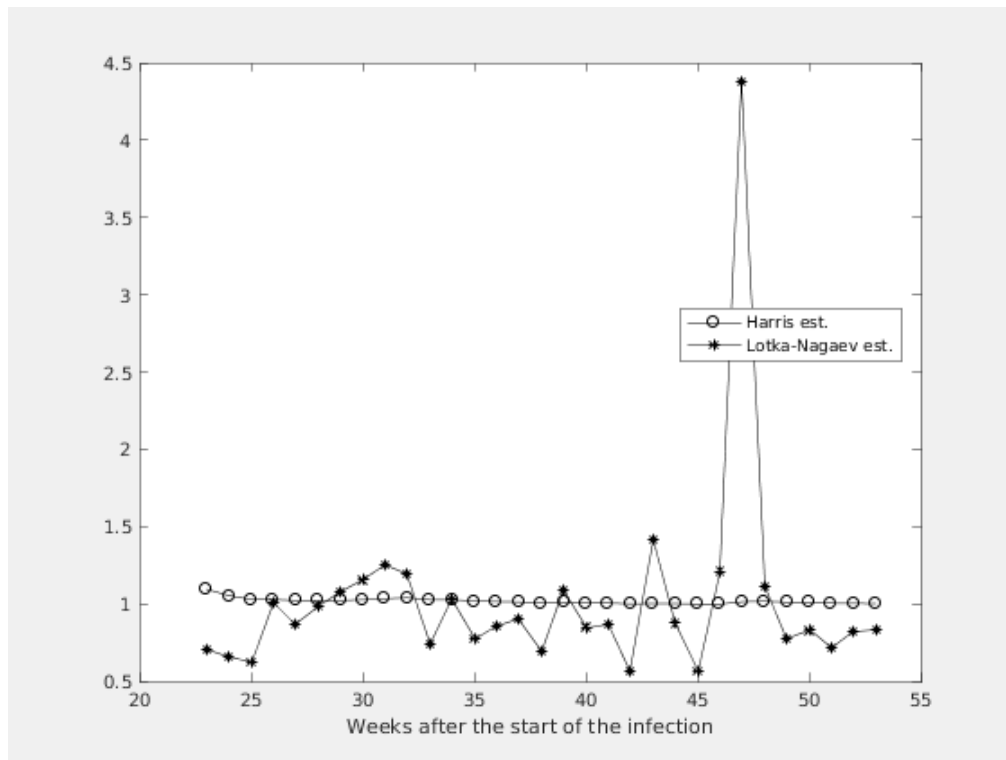


Figure 2.2. Figure

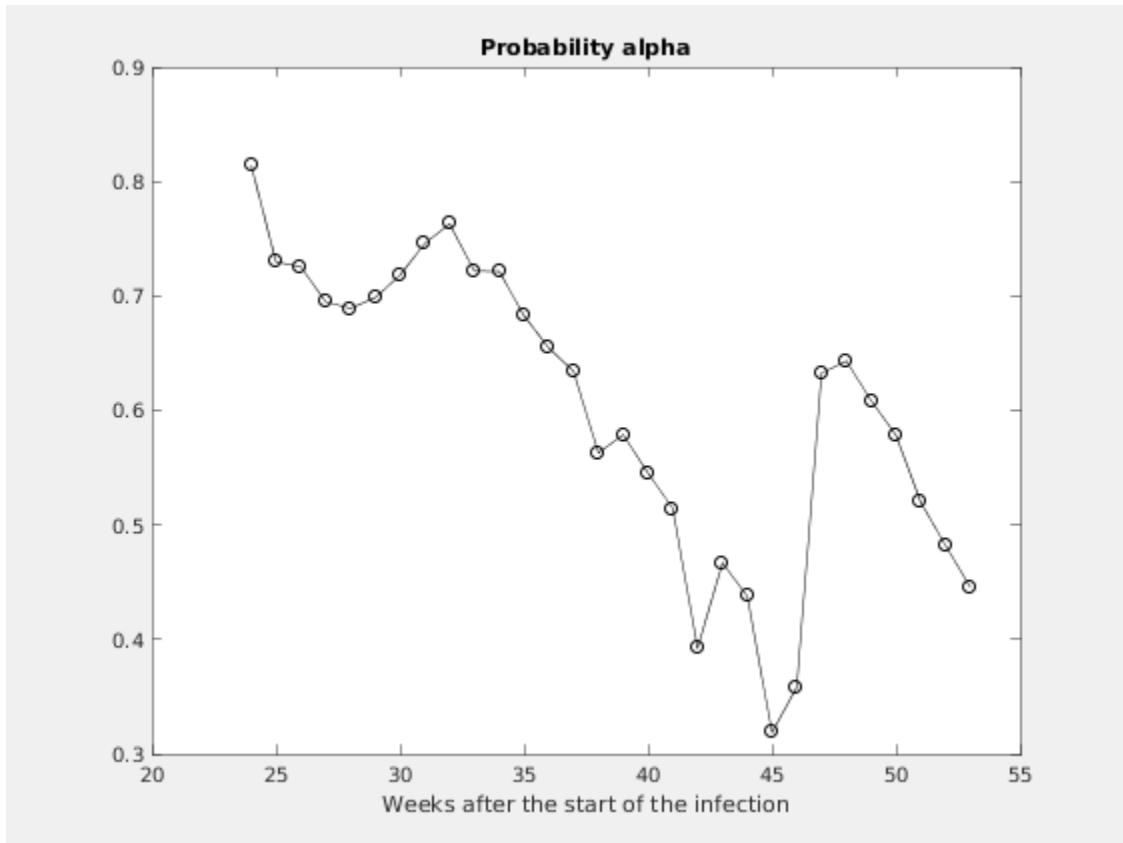


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

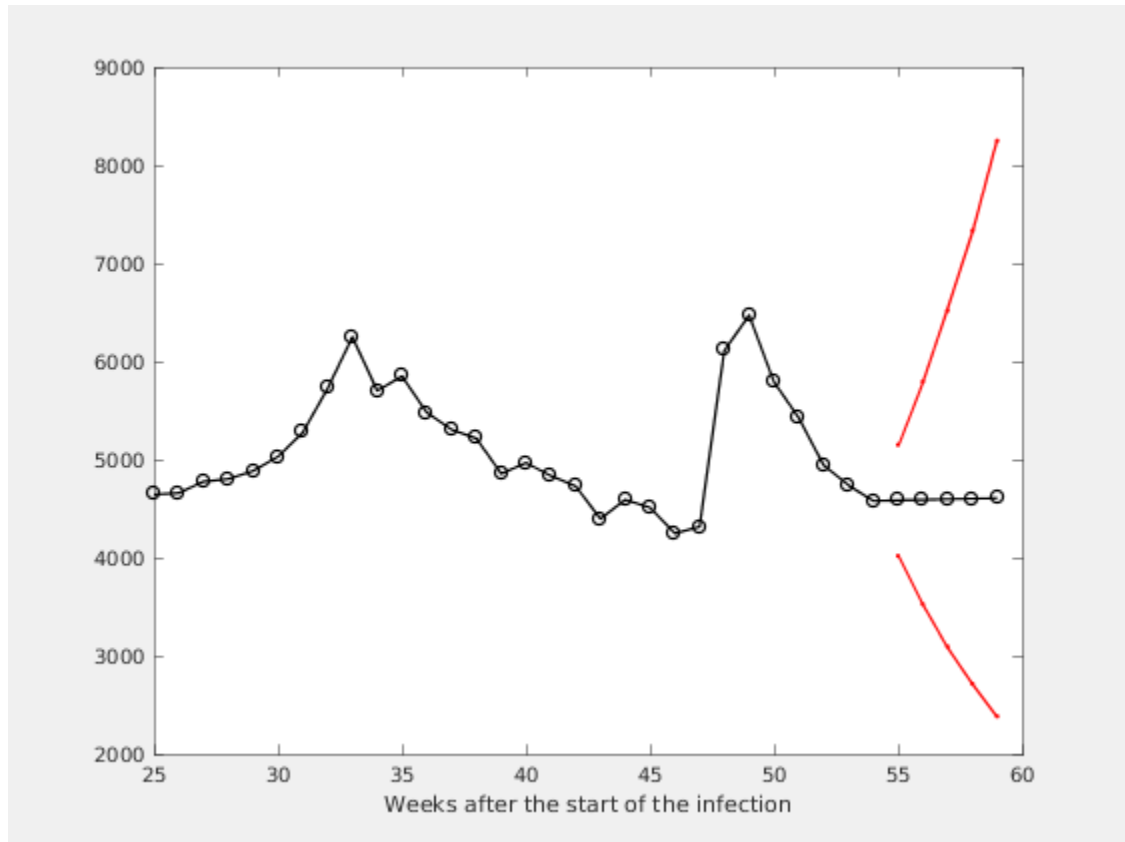
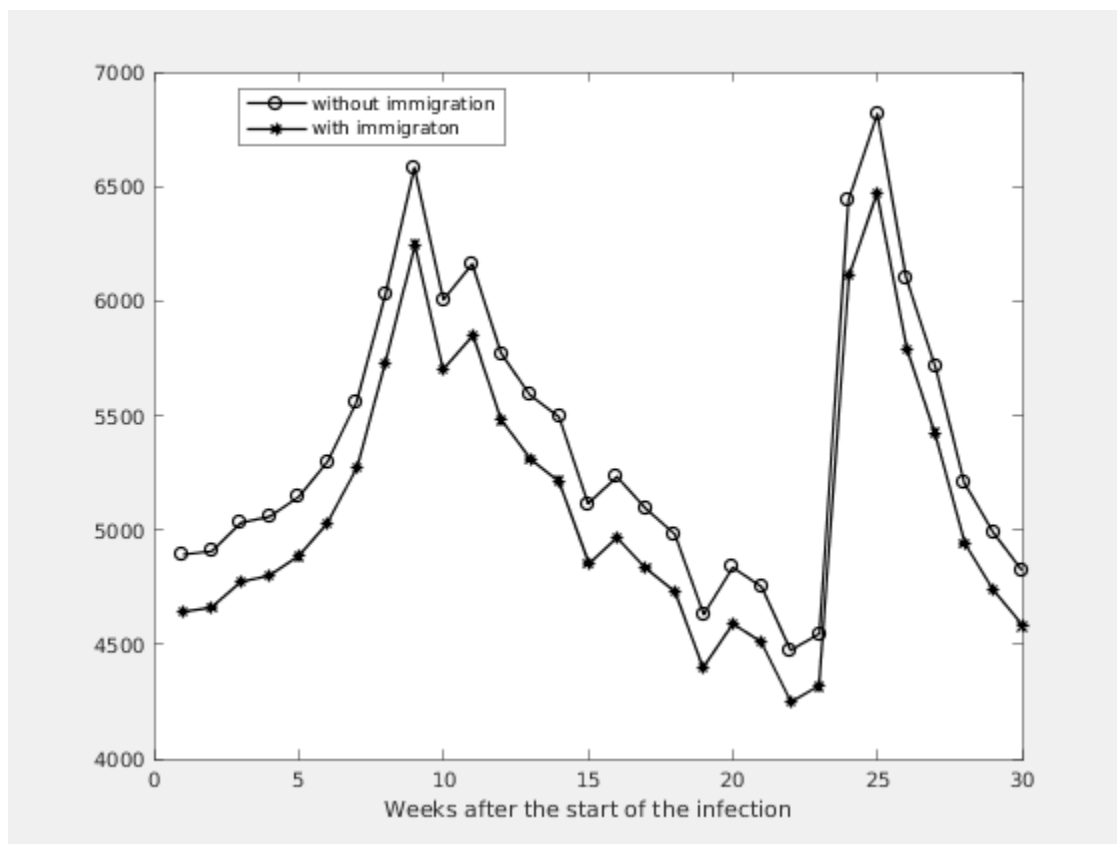


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	1.0105	0.8743 - 1.1468	0.6327	6113	6440
3	1.0077	0.8741 - 1.1413	0.6433	6471	6817
2	1.0041	0.8729 - 1.1353	0.6086	5790	6099
1	1.0025	0.8735 - 1.1314	0.5784	5425	5715
0	1.0013	0.8741 - 1.1284	0.5197	4943	5207