Branching stochastic processes as models of Covid-19 epidemic development

Var124 - week 53

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Publication date 21-Nov-2021 03:20:10

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Abstract

The results presented here are obtained using the methologi proposed in the paper https://arxiv.org/abs/2004.14838 for the country Var124. 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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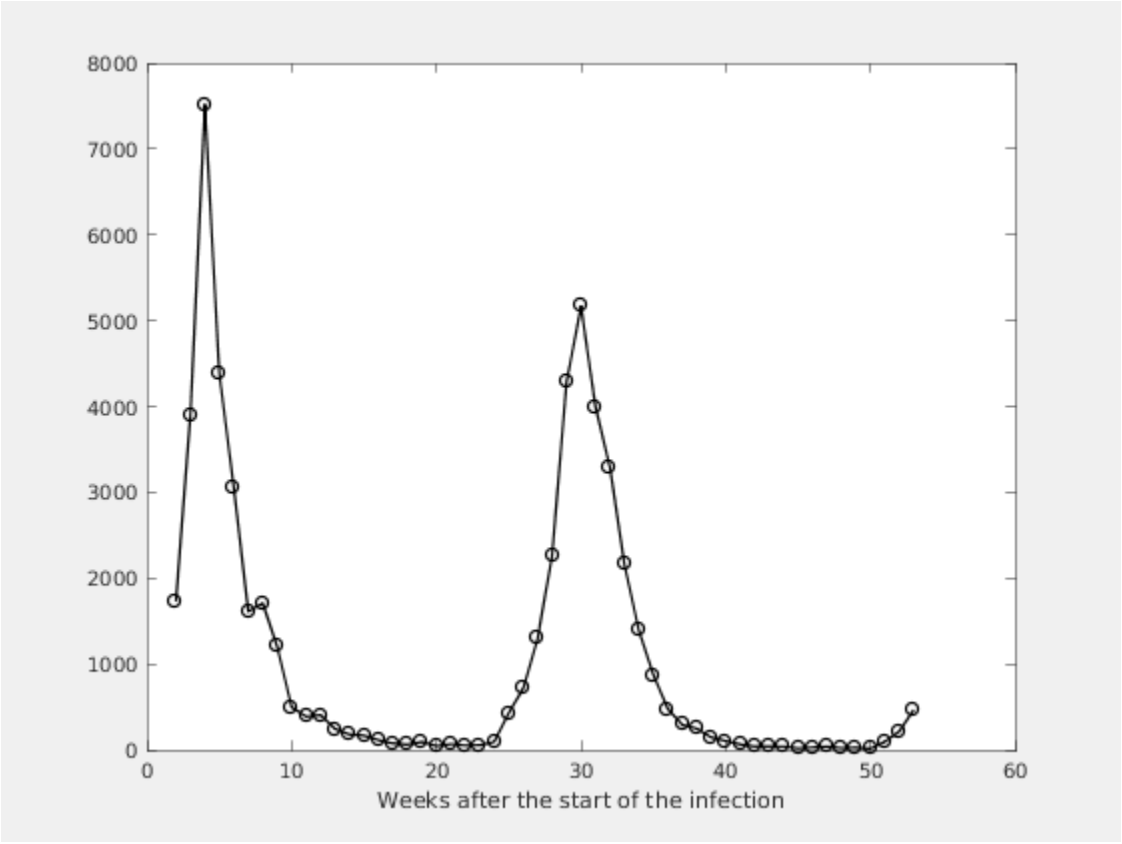
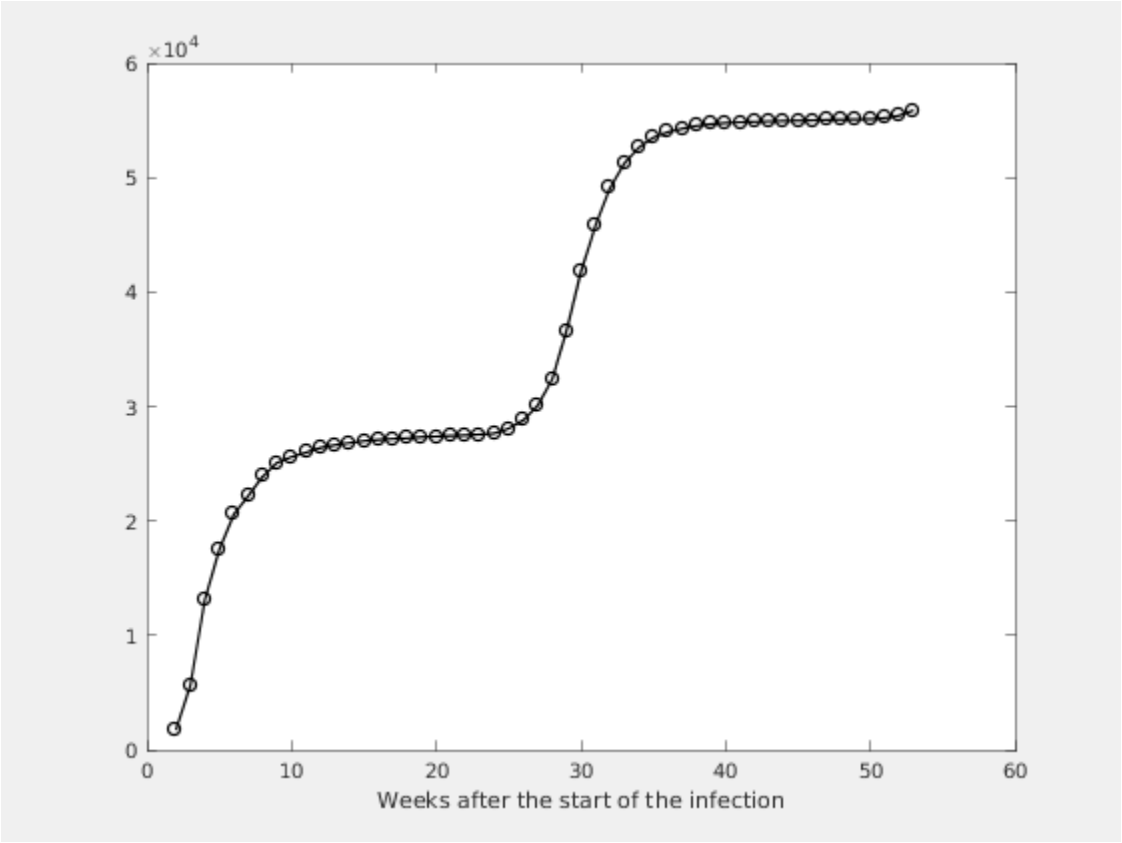


Figure 1.2. Number of the total registered cases



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

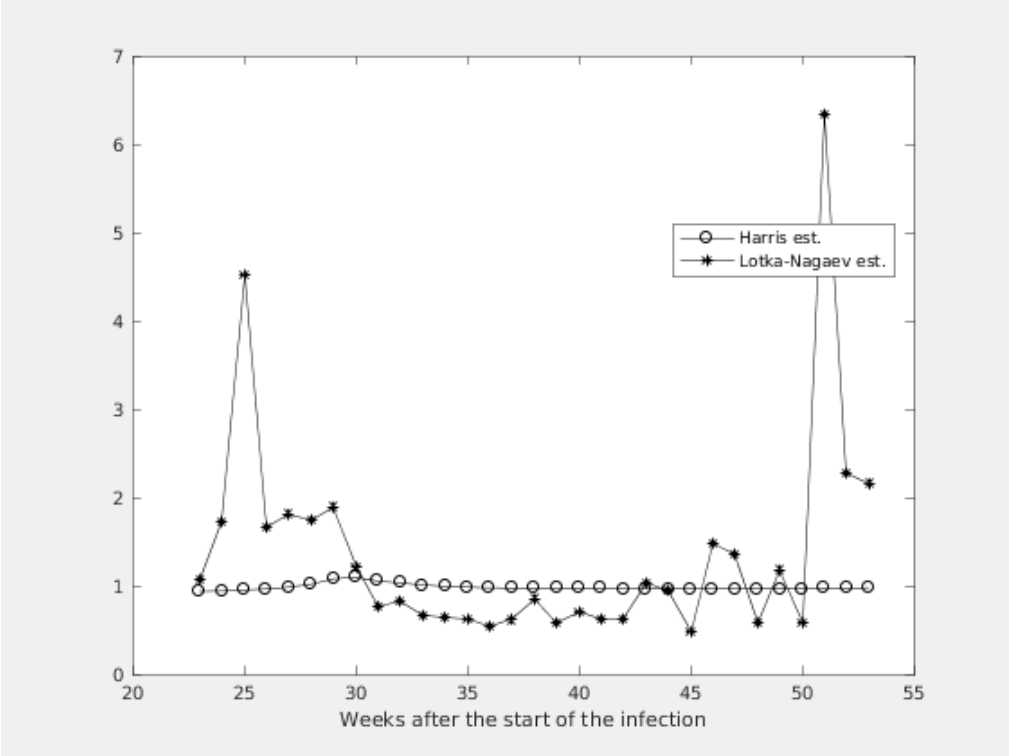


Figure 2.2. Figure

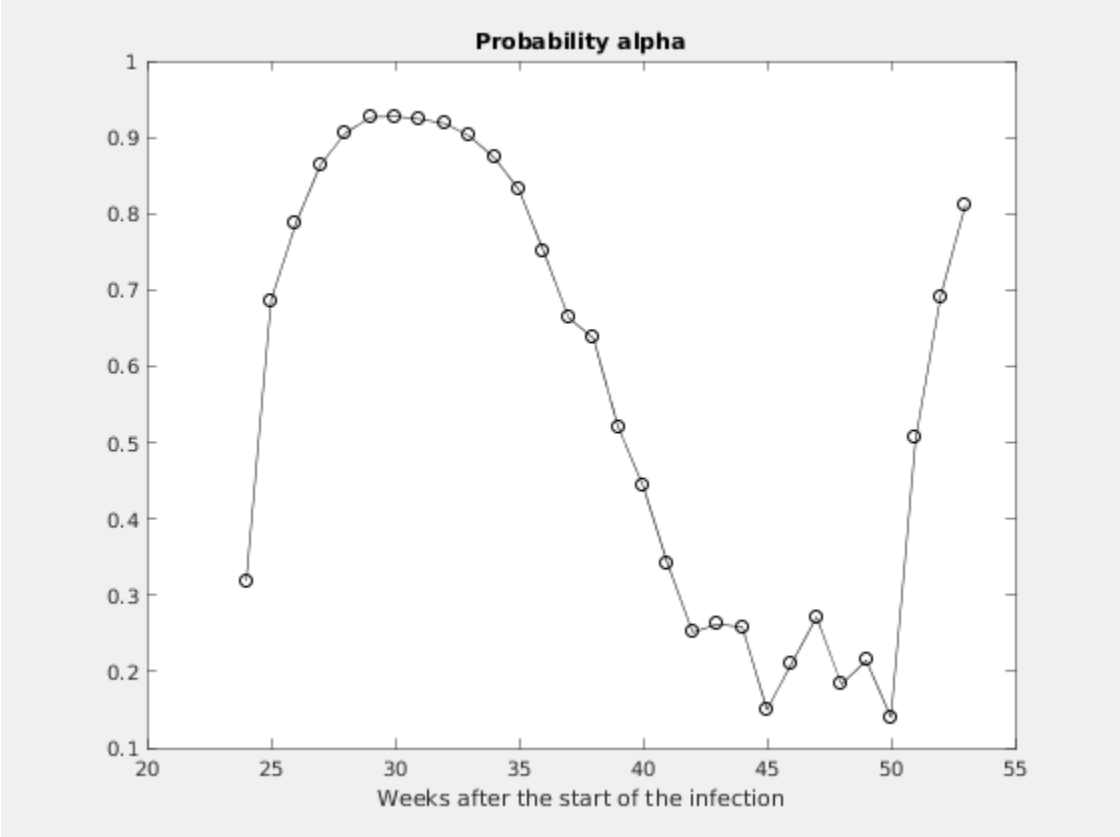


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

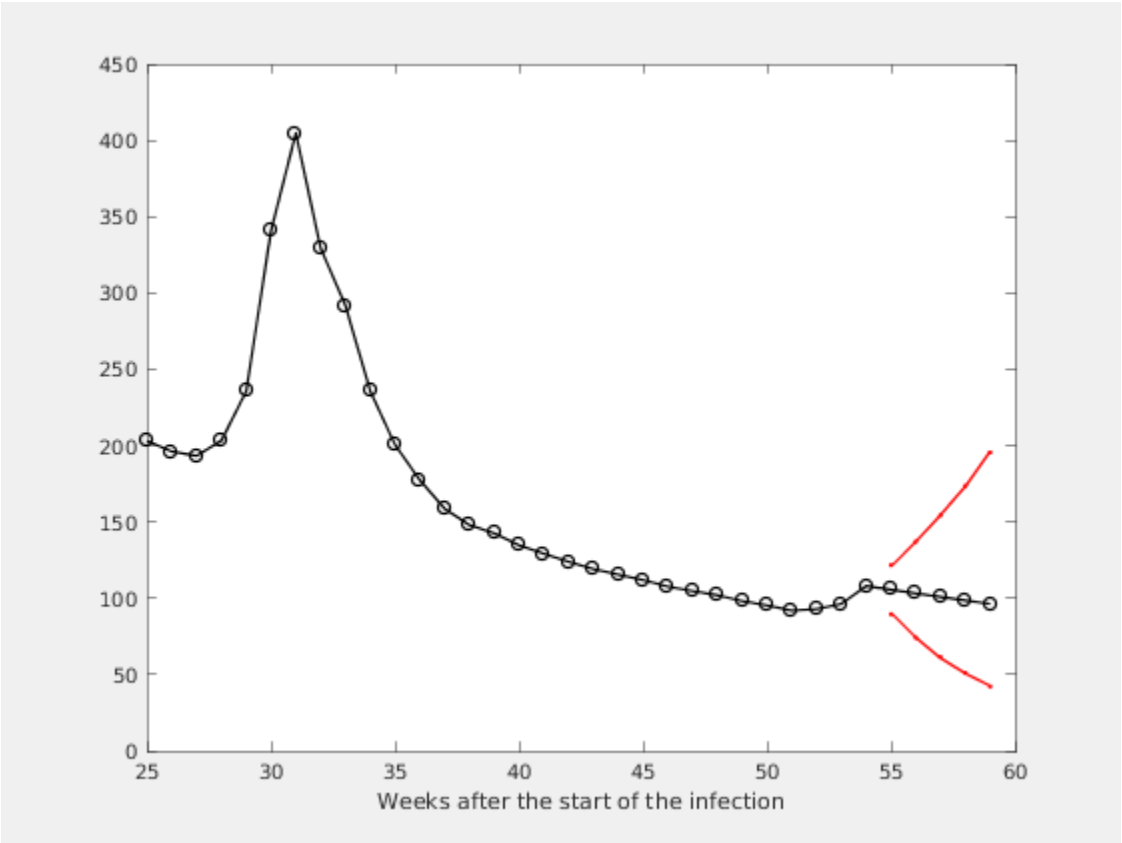
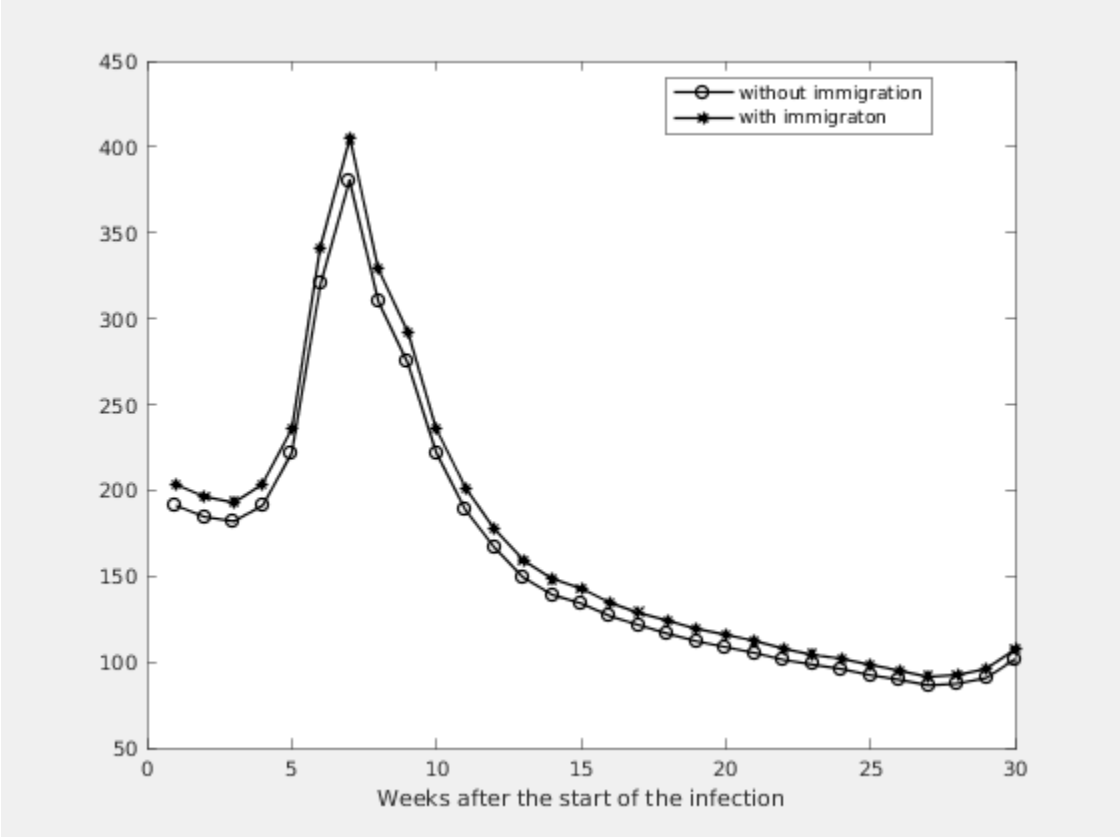


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	0.9690	0.8147 - 1.1234	0.2714	102	96
3	0.9688	0.8162 - 1.1215	0.1831	98	92
2	0.9703	0.8193 - 1.1213	0.2143	95	90
1	0.9726	0.8231 - 1.1220	0.1403	92	86
0	0.9772	0.8273 - 1.1271	0.5056	93	87