Branching stochastic processes as models of Covid-19 epidemic development

Var82 - week 53

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Abstract

The results presented here are obtained using the methologi proposed in the paper https://arxiv.o-rg/abs/2004.14838 for the country Var82. 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

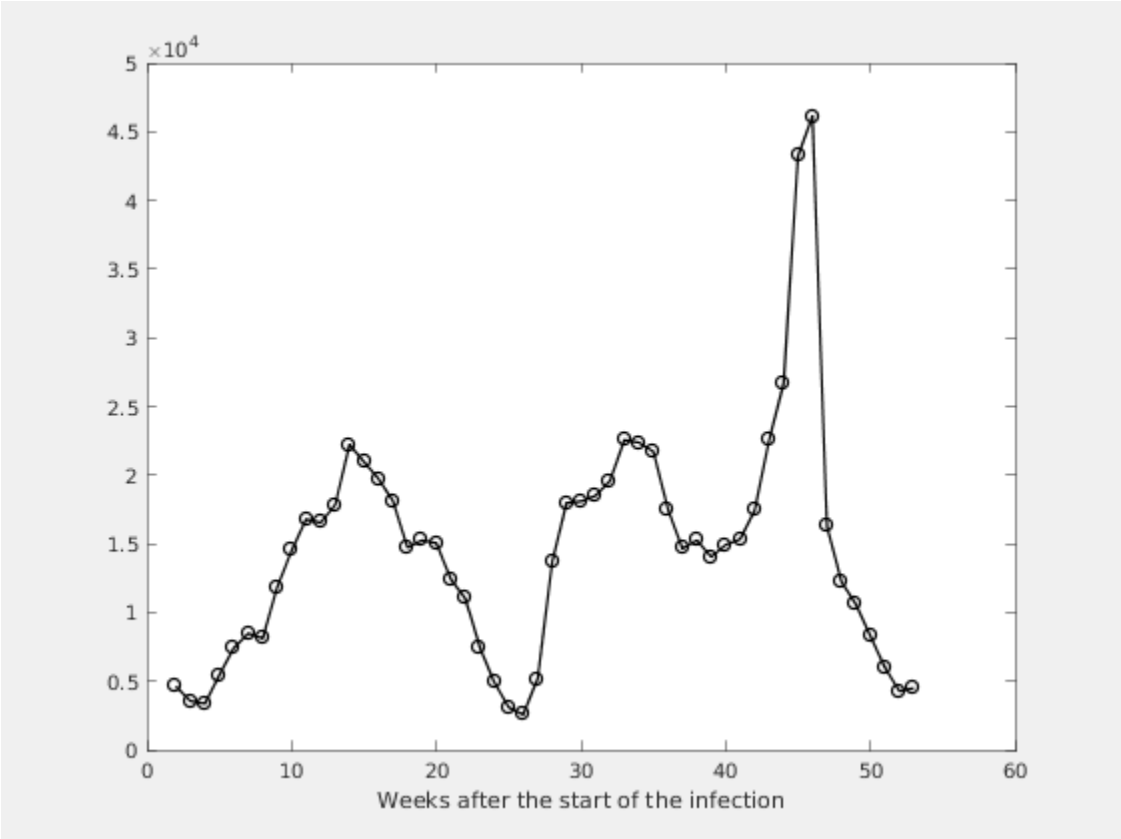**Figure 1.1. Number of the weekly reported laboratory-confirmed cases**
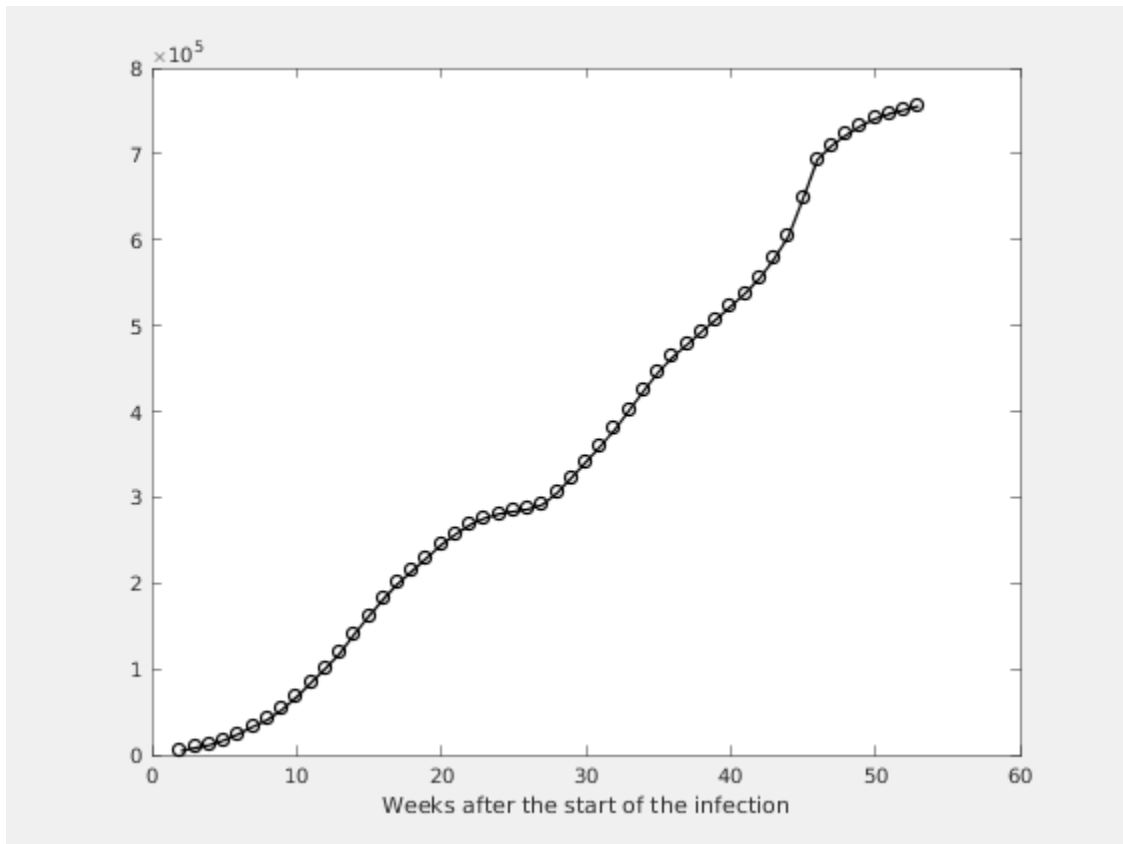
Figure 1.2. Number of the total registered cases

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
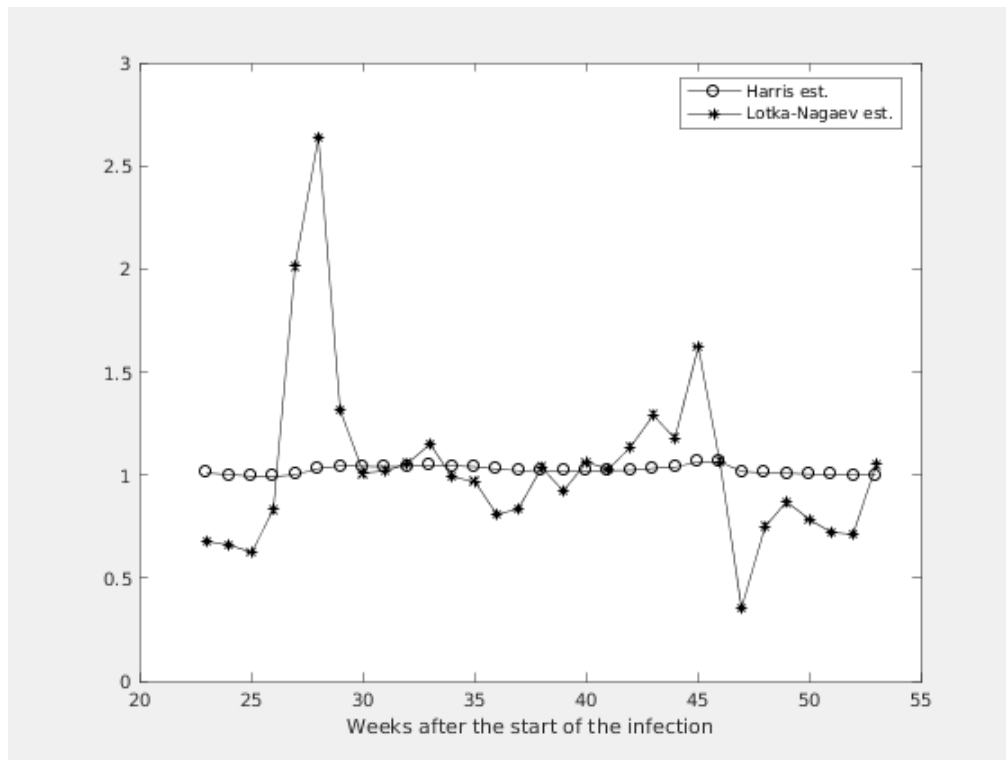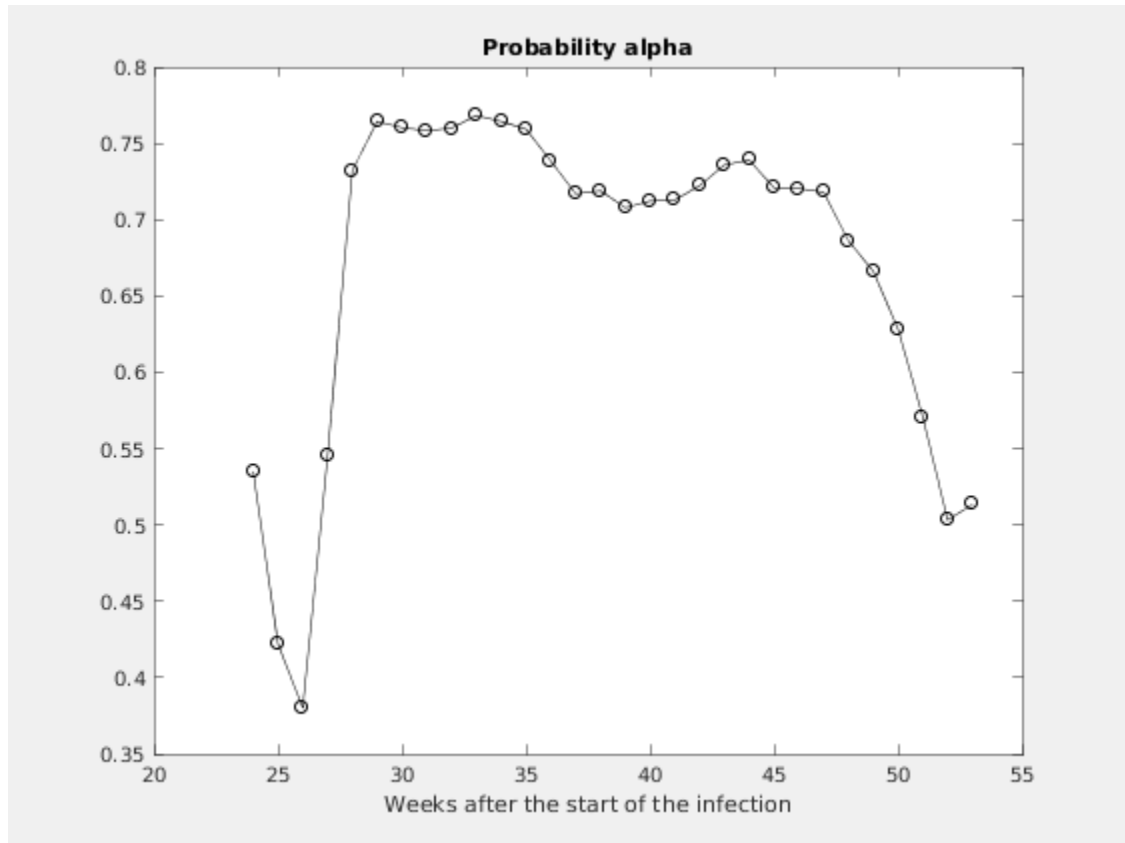
Figure 2.2. Figure

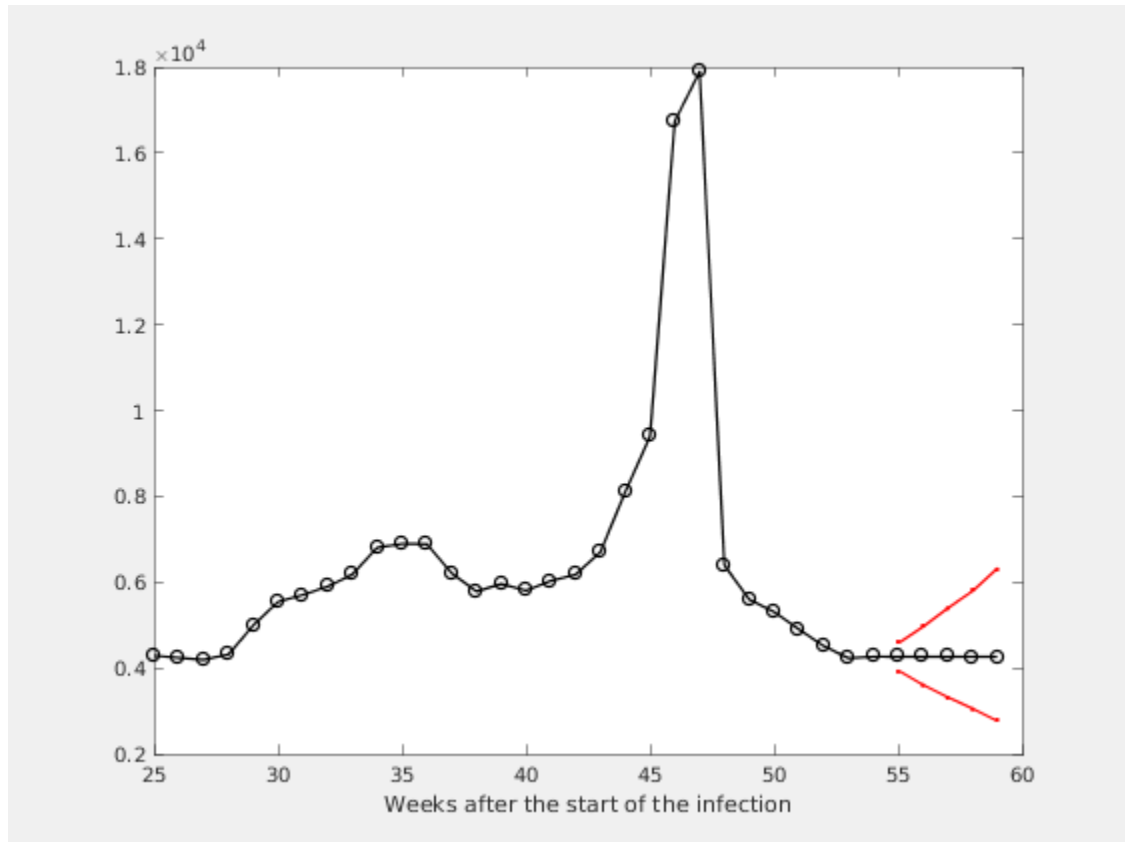**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**
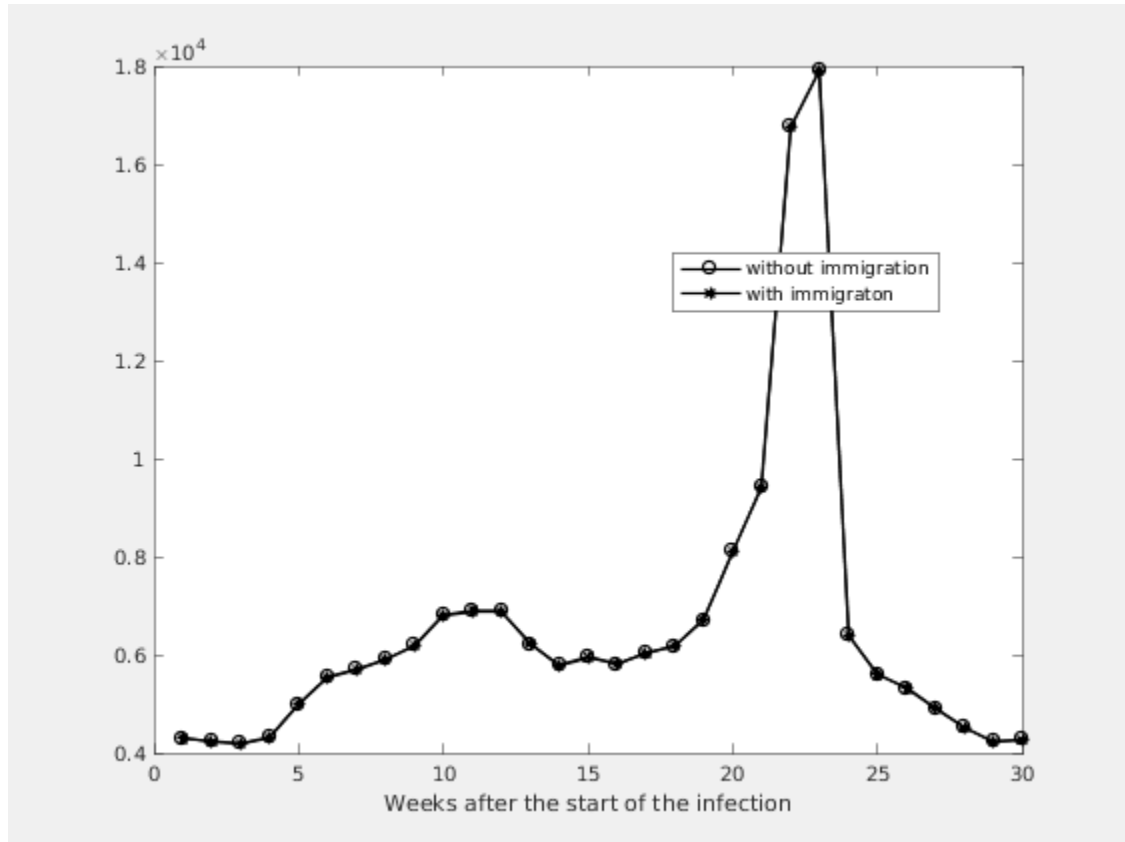
Figure 2.4. Expected number of the nonregistered infected individuals with immigration

Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	1.0083	0.9204 - 1.0962	0.7180	6393	6401
3	1.0050	0.9184 - 1.0917	0.6862	5595	5602
2	1.0019	0.9167 - 1.0871	0.6662	5309	5316
1	0.9996	0.9155 - 1.0836	0.6284	4904	4910
0	0.9998	0.9168 - 1.0829	0.5708	4515	4520