

Branching stochastic processes as models of Covid-19 epidemic development

Var30 - 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 Var30. 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

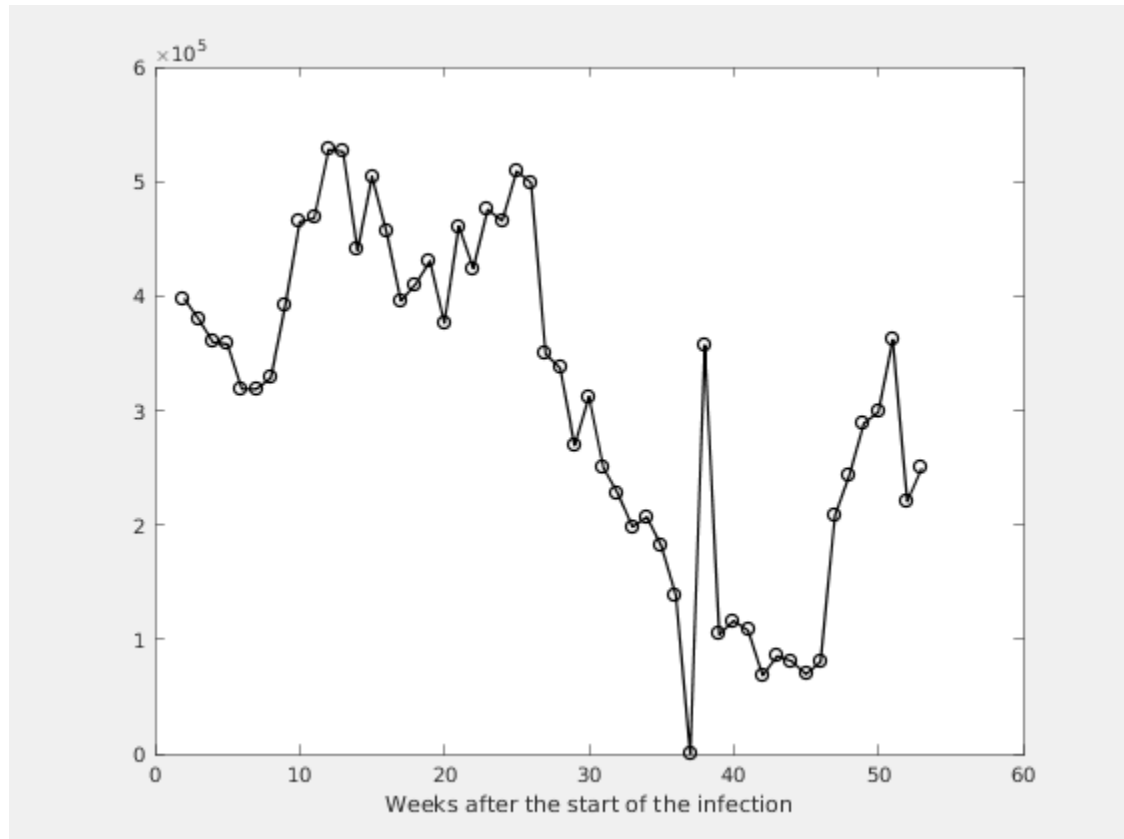
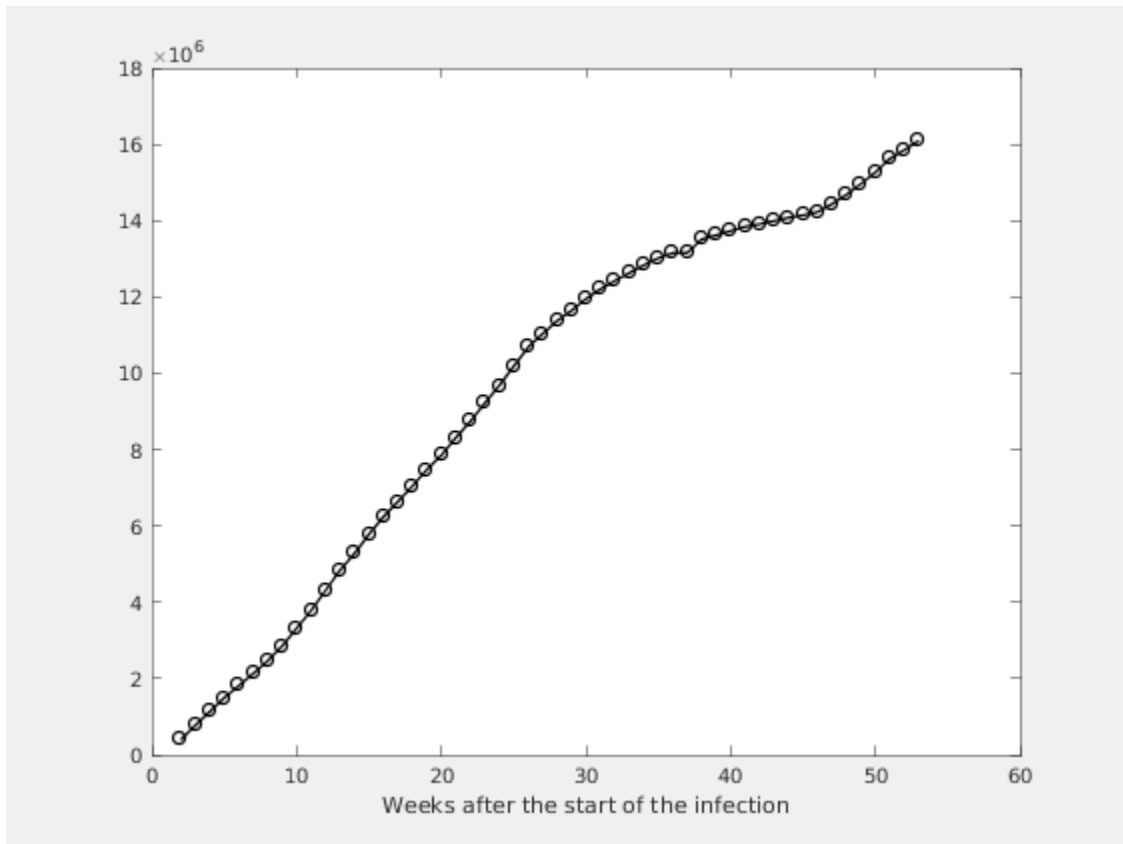


Figure 1.2. Number of the total registered cases



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

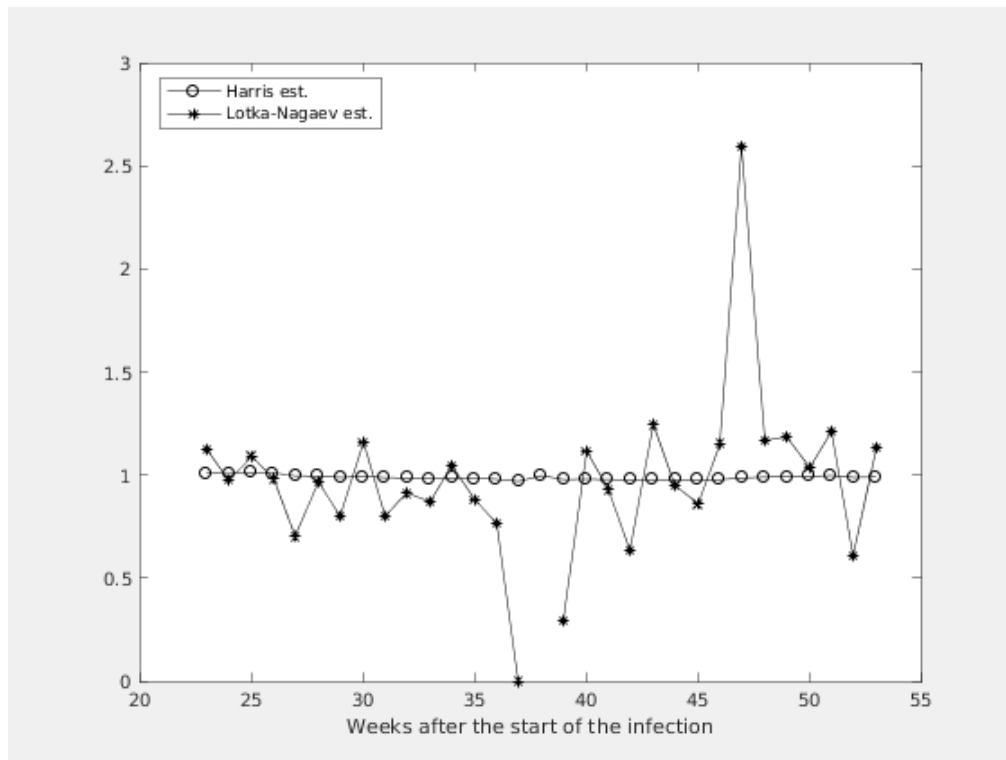


Figure 2.2. Figure

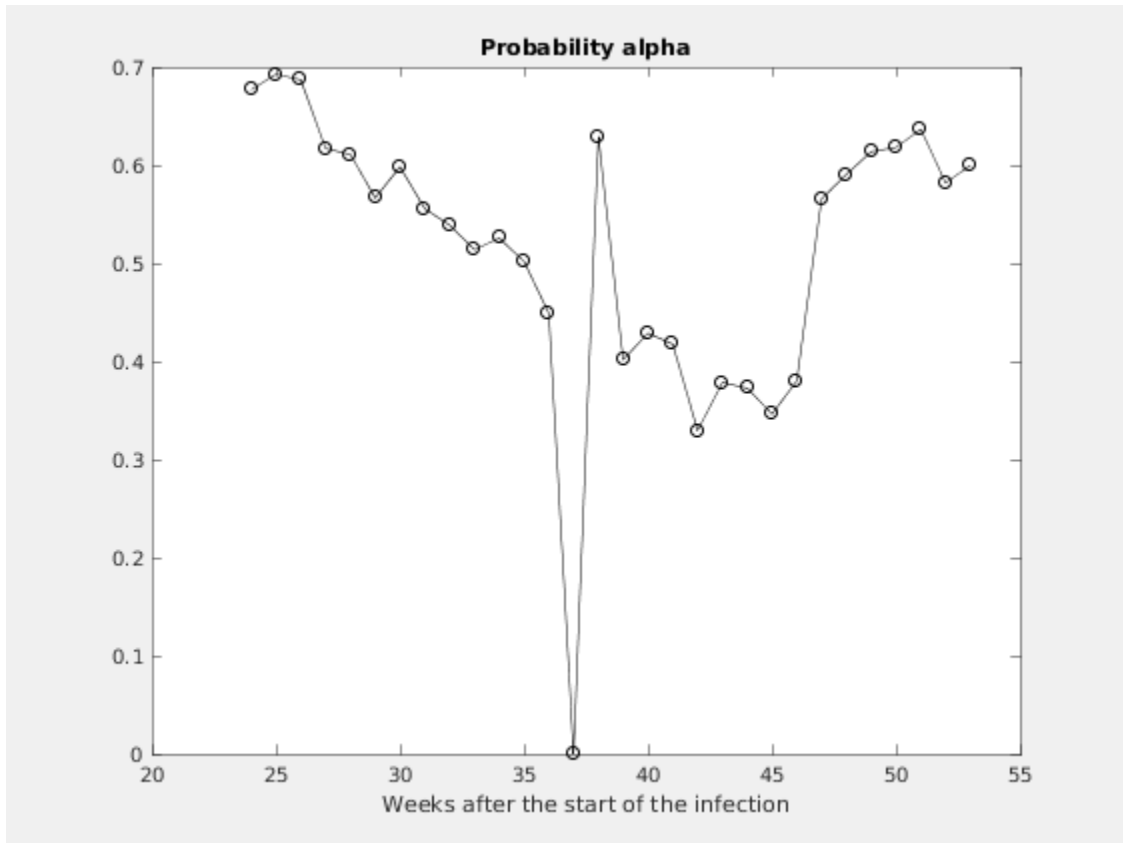


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

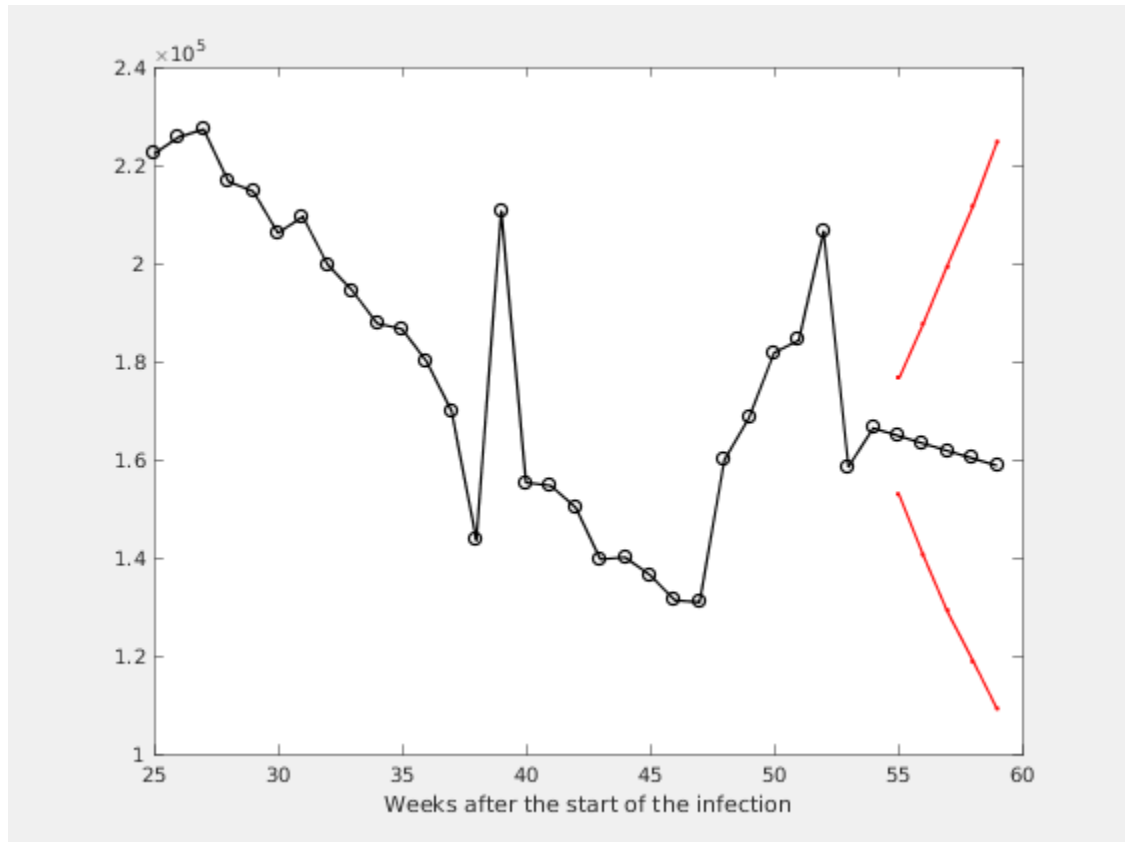
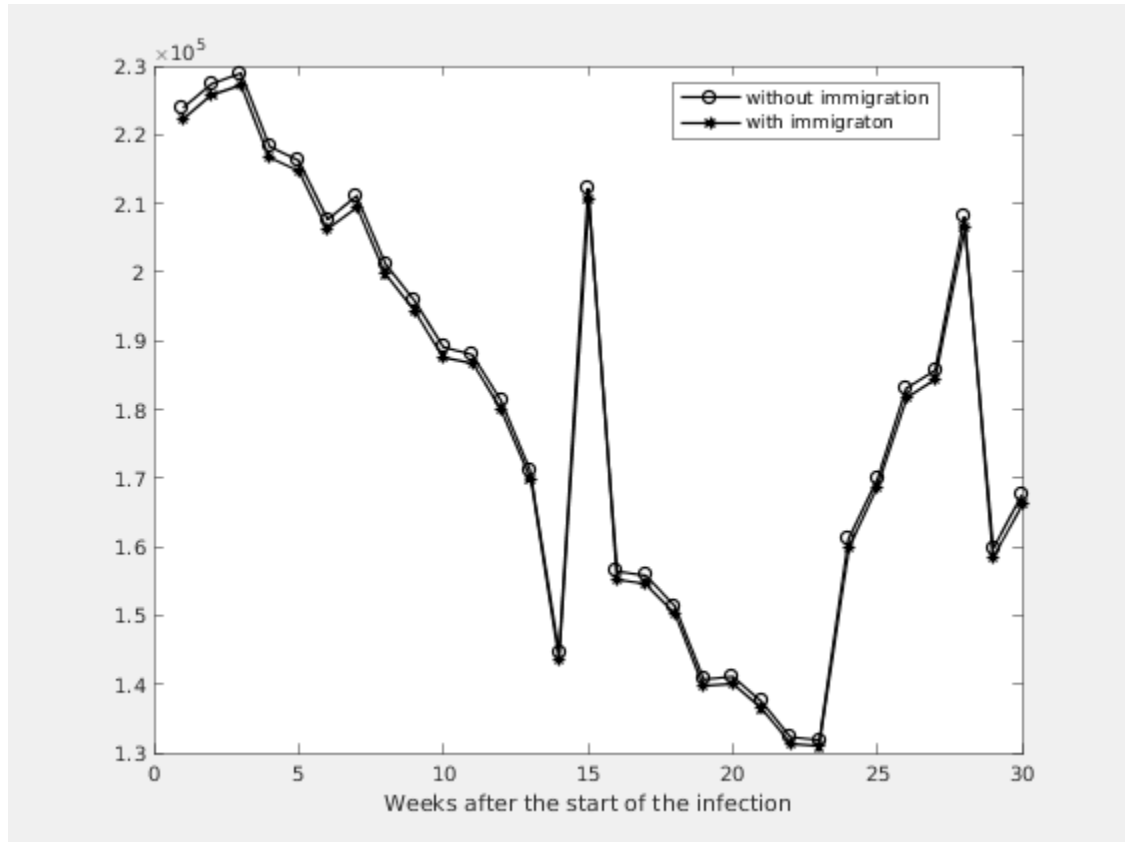


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	0.9926	0.9157 - 1.0694	0.5657	159929	161107
3	0.9934	0.9176 - 1.0691	0.5907	168610	169851
2	0.9976	0.9230 - 1.0722	0.6137	181770	183108
1	0.9887	0.9155 - 1.0618	0.6182	184315	185672
0	0.9906	0.9185 - 1.0628	0.6366	206474	207995