

Branching stochastic processes as models of Covid-19 epidemic development

Var90 - 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 Var90. 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

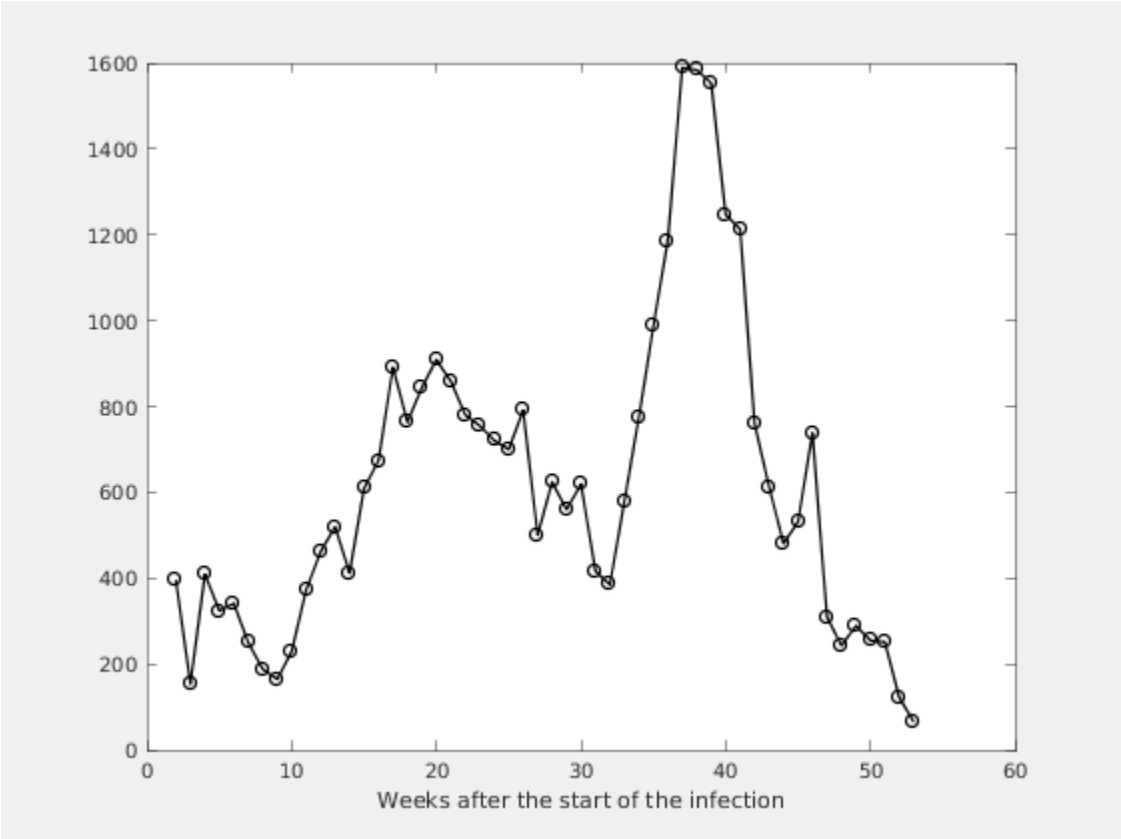
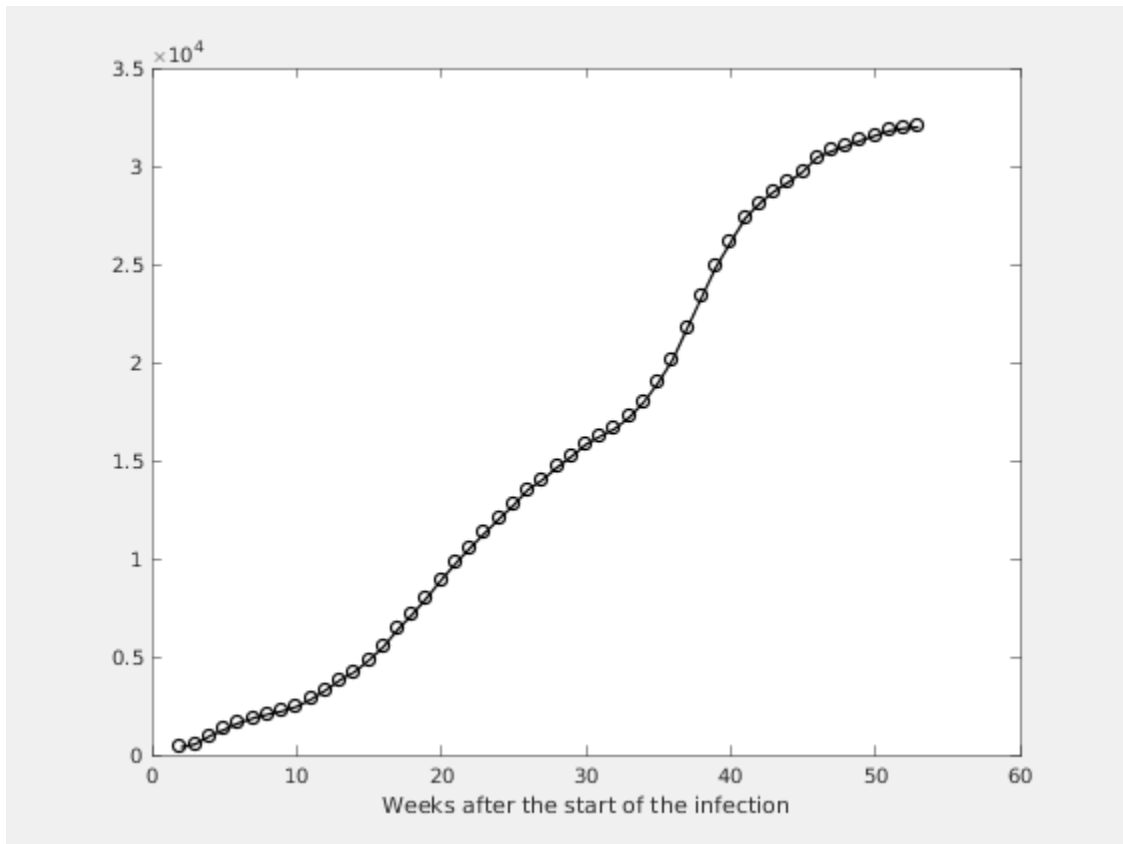


Figure 1.2. Number of the total registered cases



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

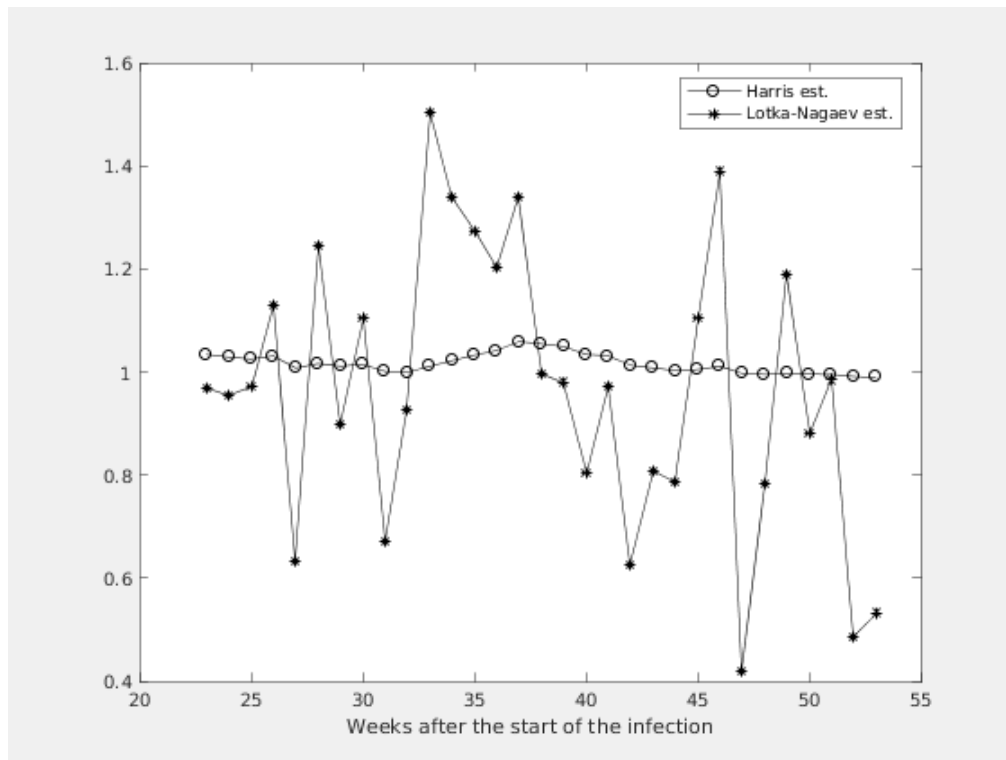


Figure 2.2. Figure

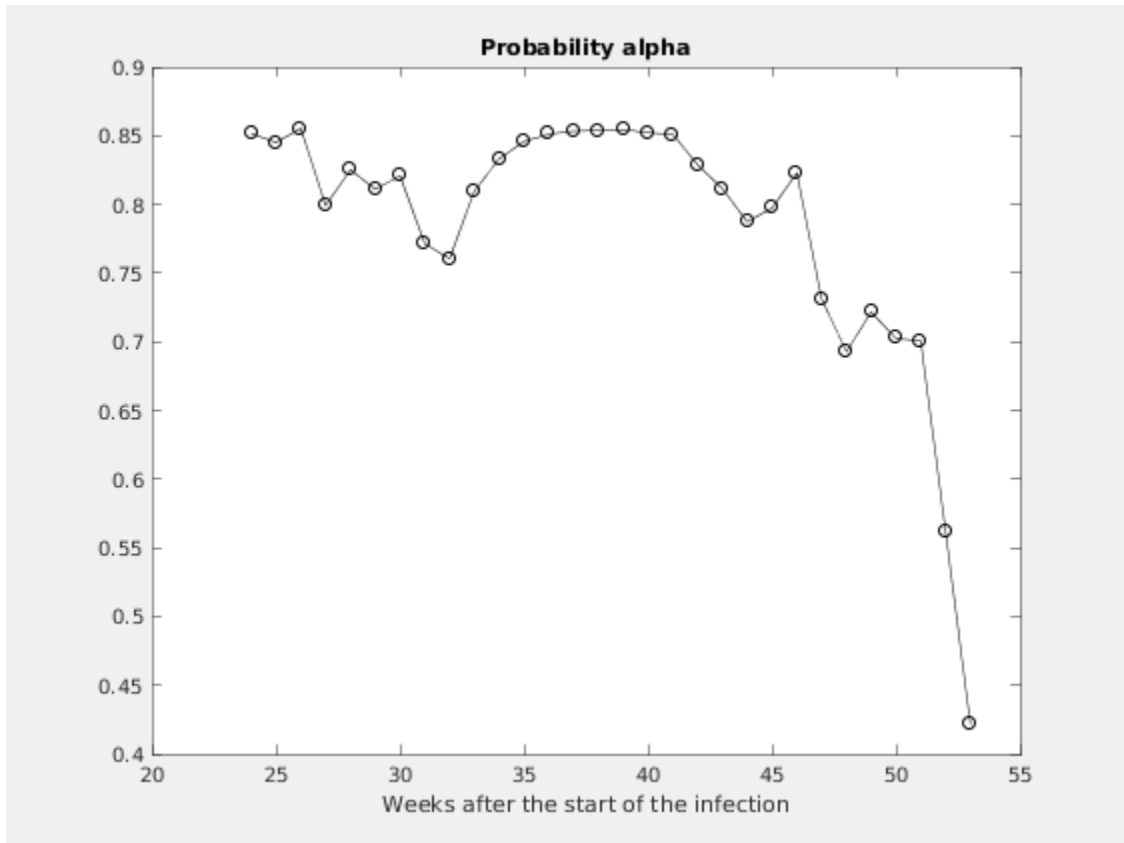


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

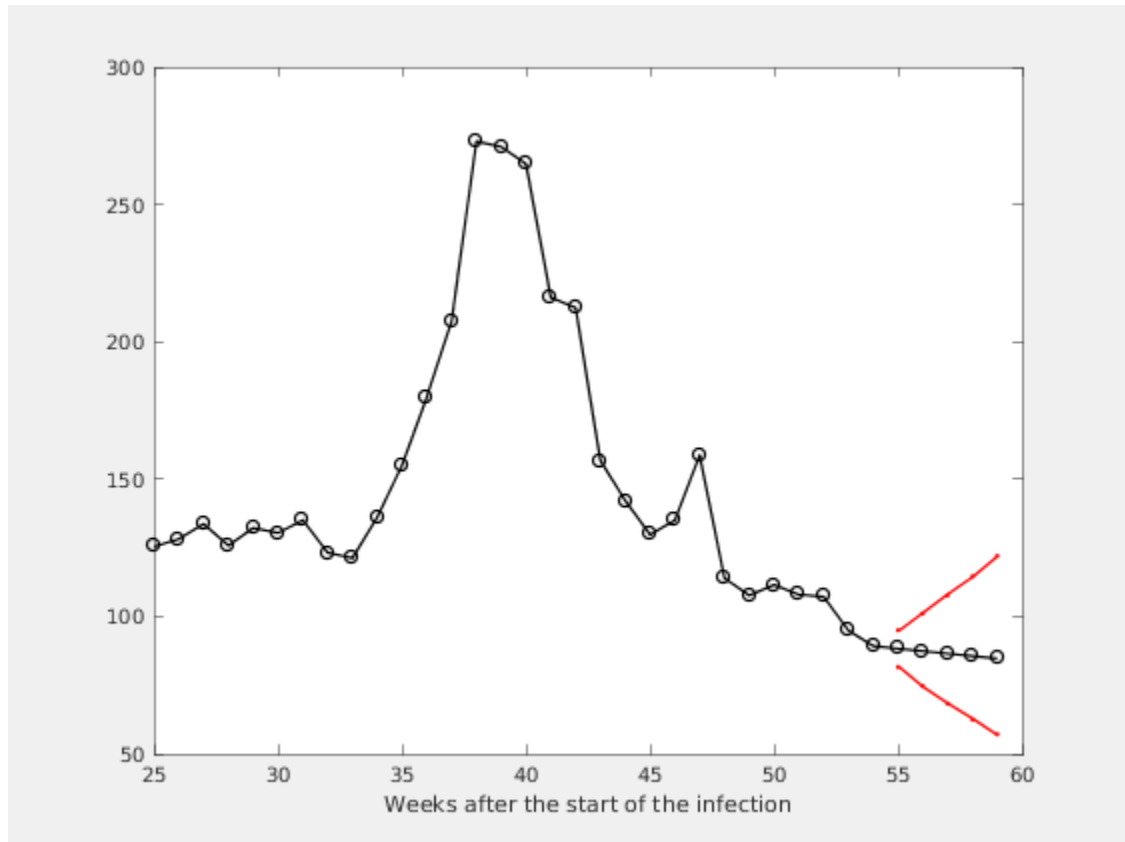
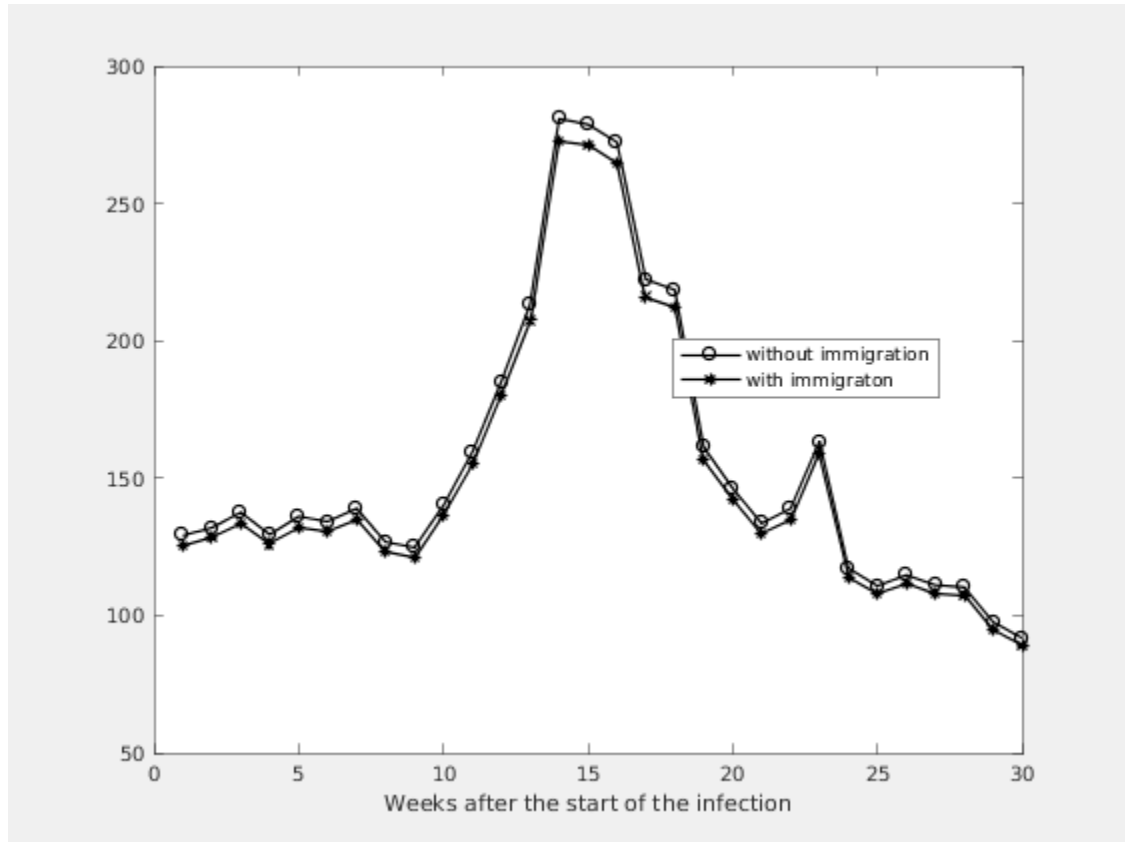


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	0.9965	0.9169 - 1.0762	0.7311	114	117
3	0.9955	0.9169 - 1.0741	0.6929	108	111
2	0.9954	0.9178 - 1.0730	0.7216	112	115
1	0.9914	0.9149 - 1.0679	0.7025	108	111
0	0.9896	0.9142 - 1.0651	0.7006	107	110