

Branching stochastic processes as models of Covid-19 epidemic development

Var190 - 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 Var190. 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

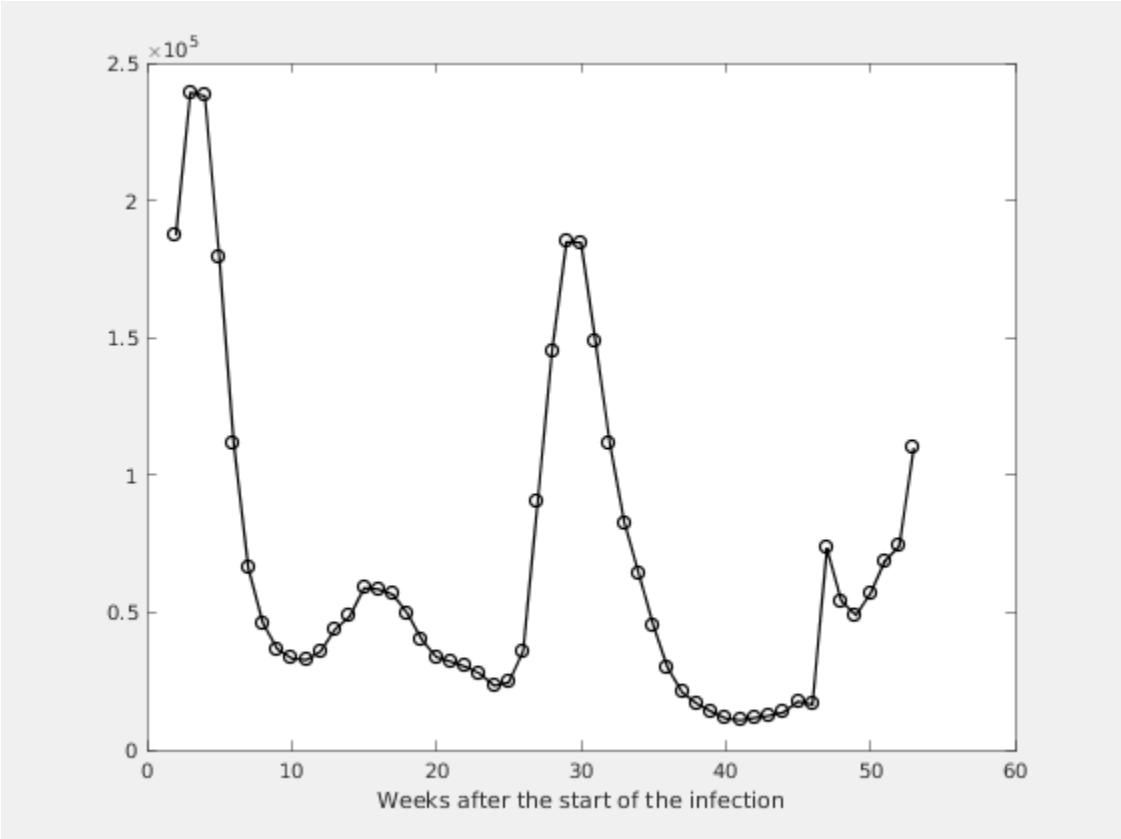
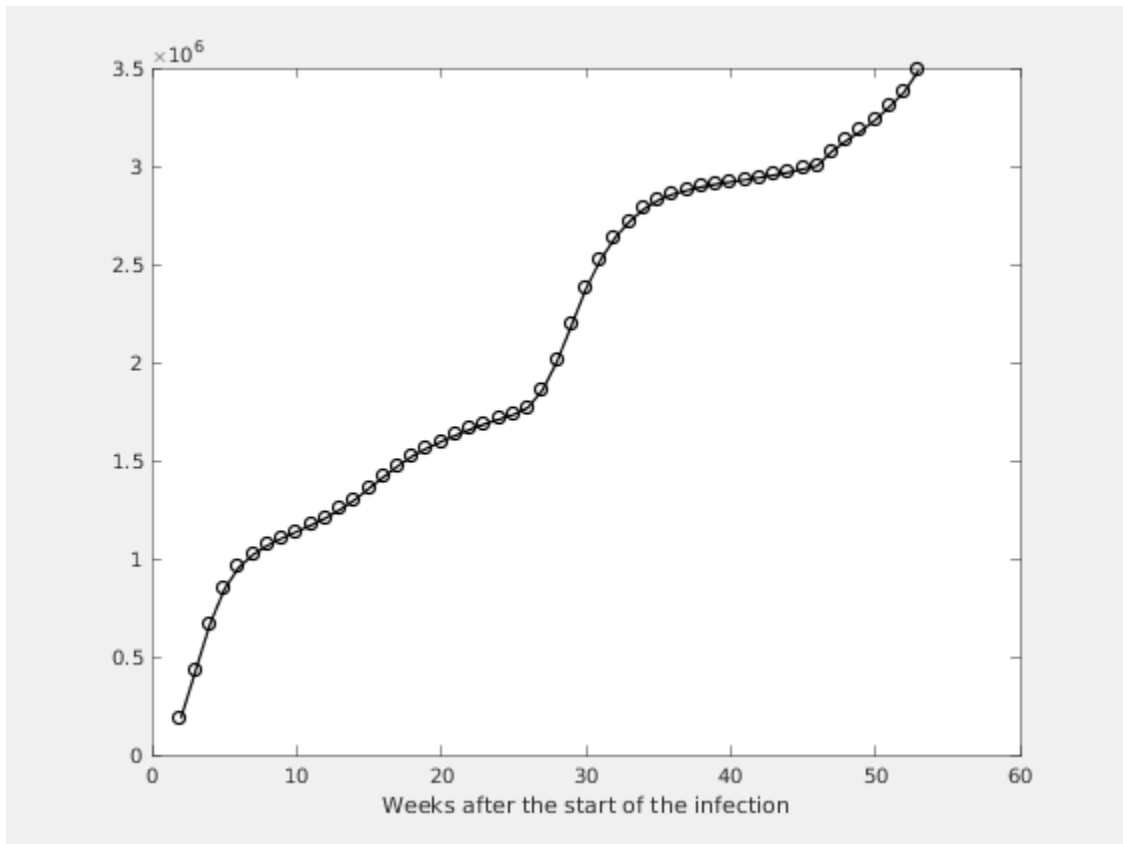


Figure 1.2. Number of the total registered cases



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

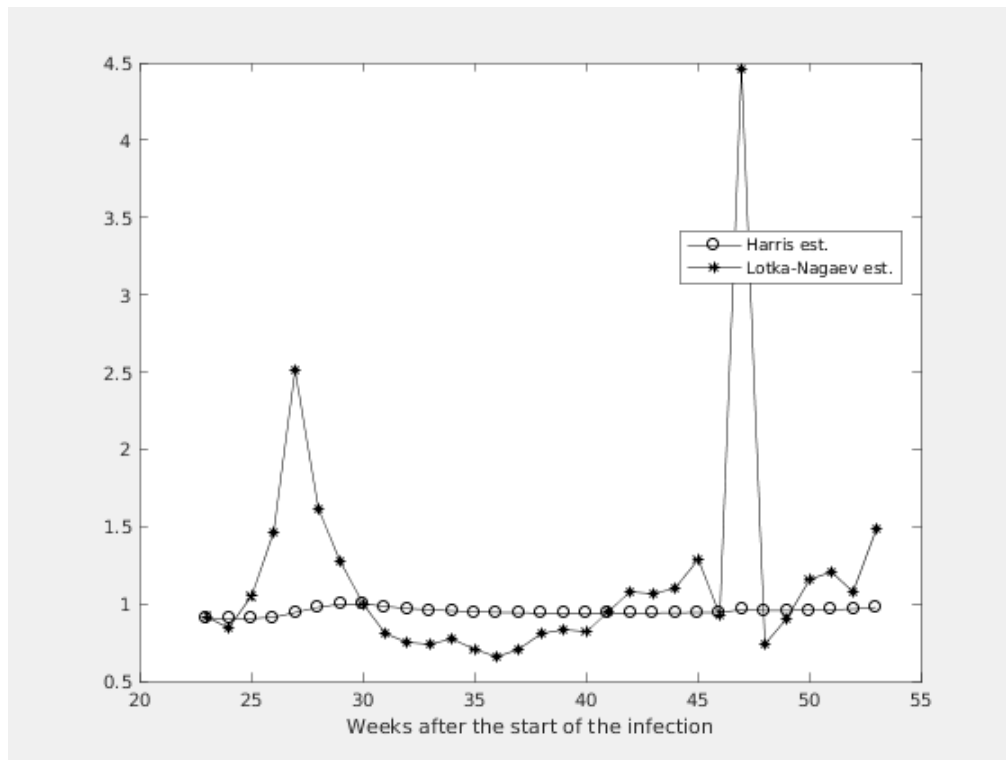


Figure 2.2. Figure

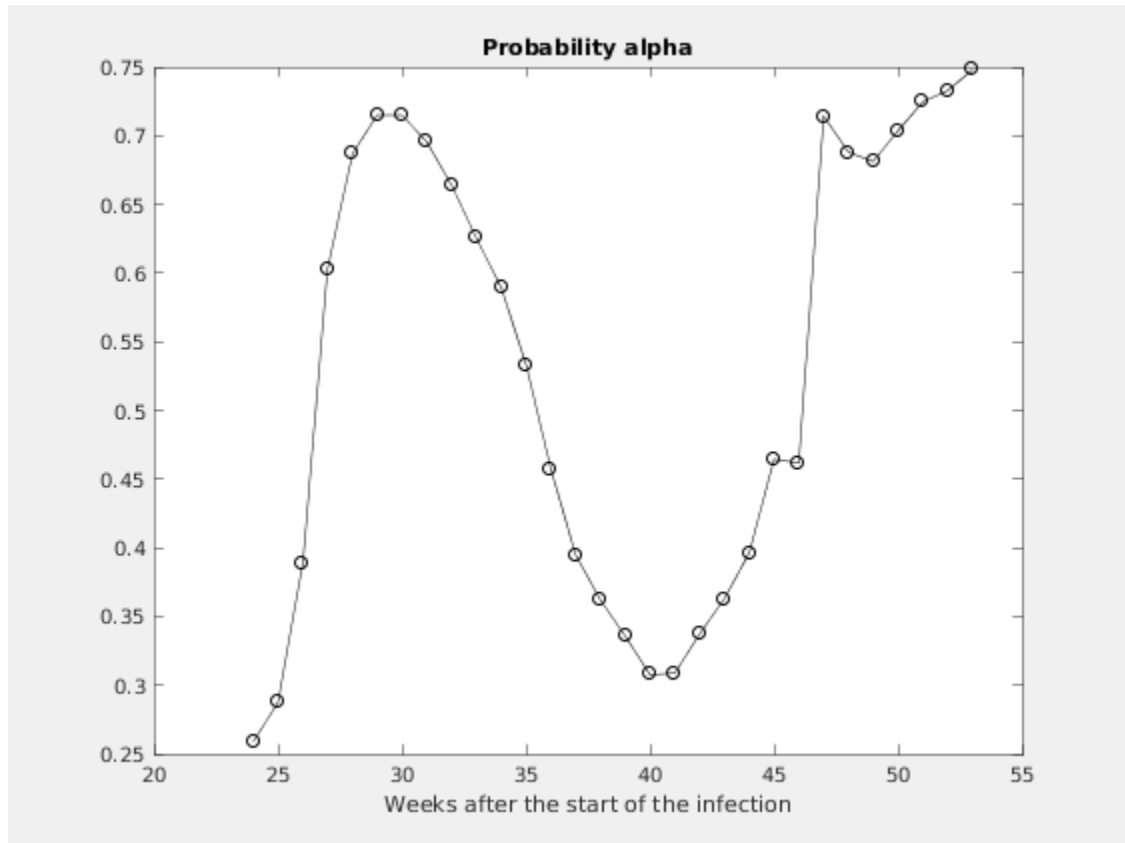


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

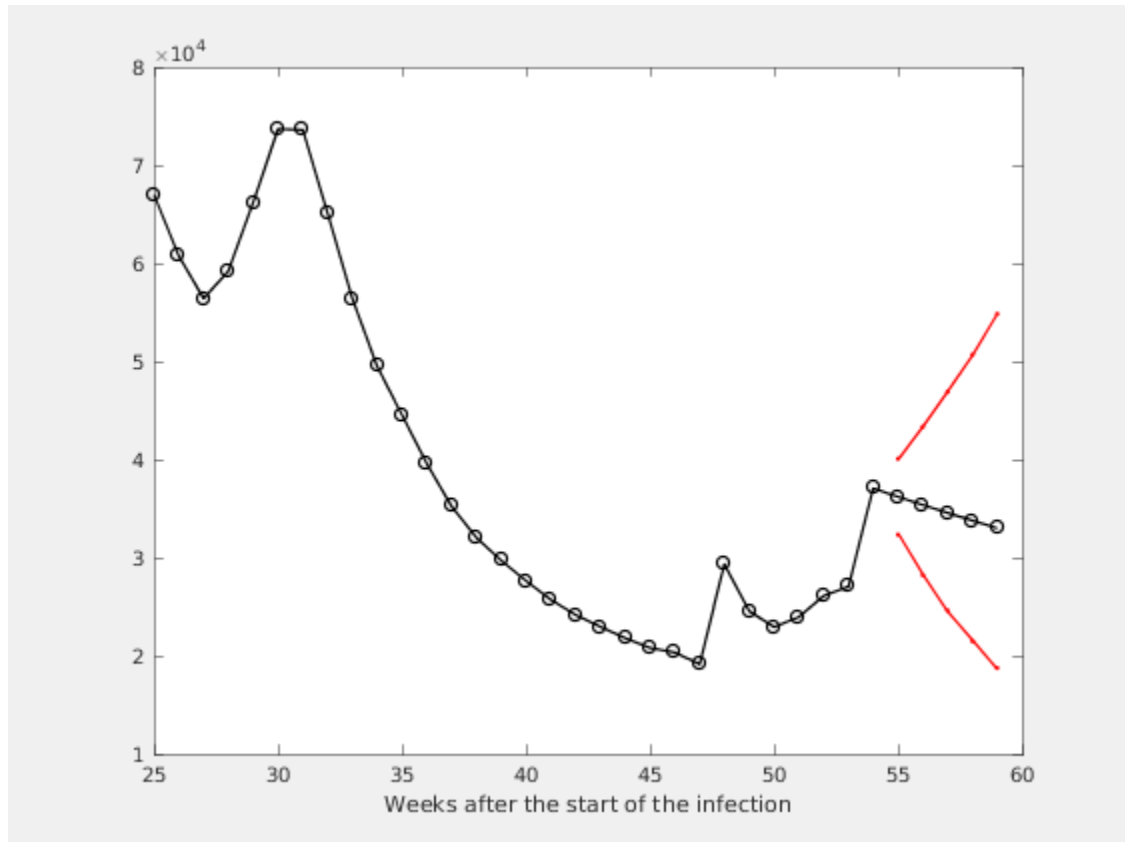
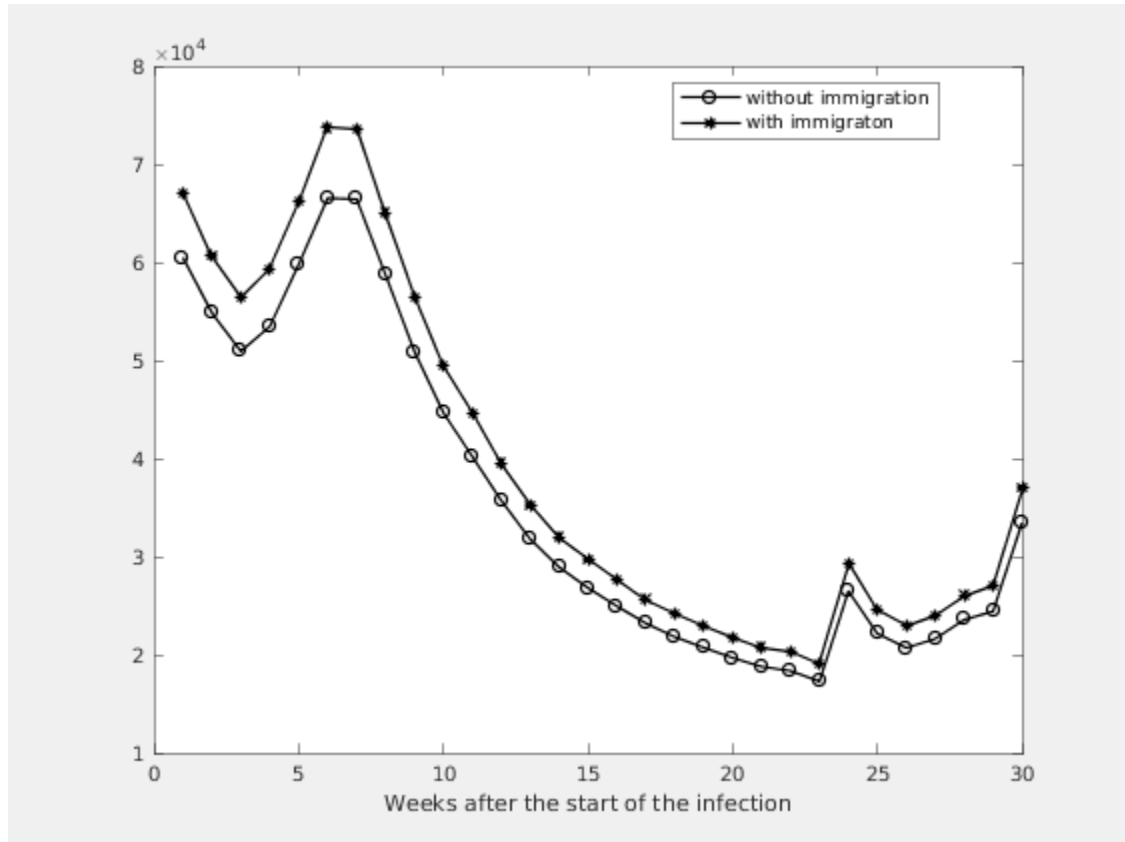


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	0.9558	0.8415 - 1.0702	0.7143	29314	26465
3	0.9590	0.8468 - 1.0712	0.6880	24553	22167
2	0.9634	0.8533 - 1.0734	0.6813	22930	20702
1	0.9658	0.8575 - 1.0741	0.7036	23952	21624
0	0.9771	0.8704 - 1.0838	0.7248	26110	23572