

Branching stochastic processes as models of Covid-19 epidemic development

Var48 - week 53

N. Yanev, V. Stoimenova, D. Atanasov

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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 Var48. 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

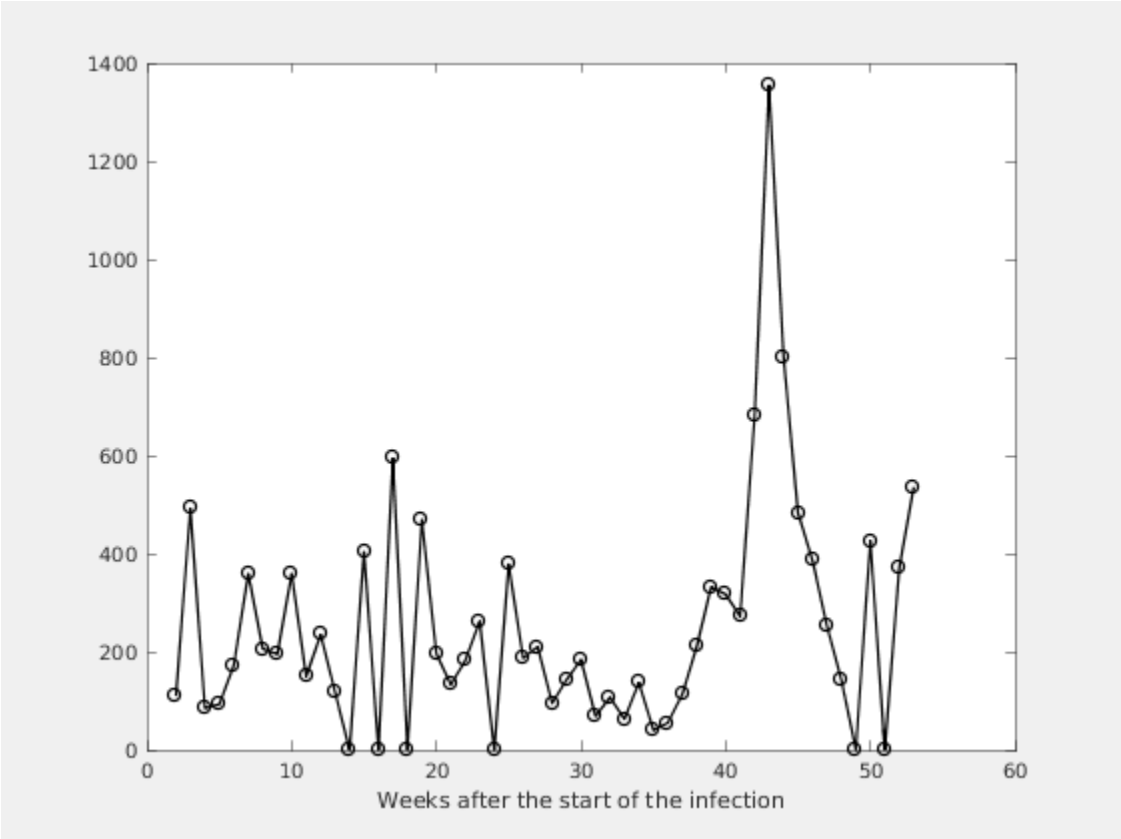
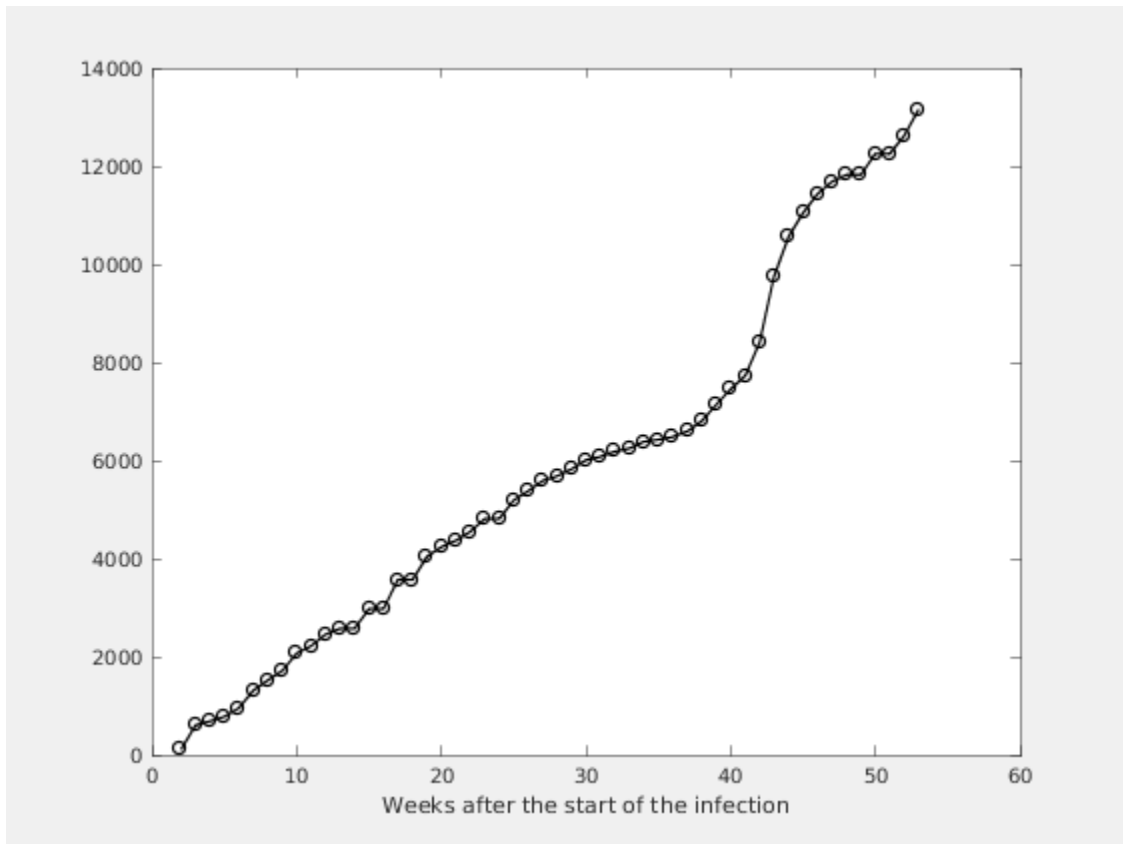


Figure 1.2. Number of the total registered cases



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

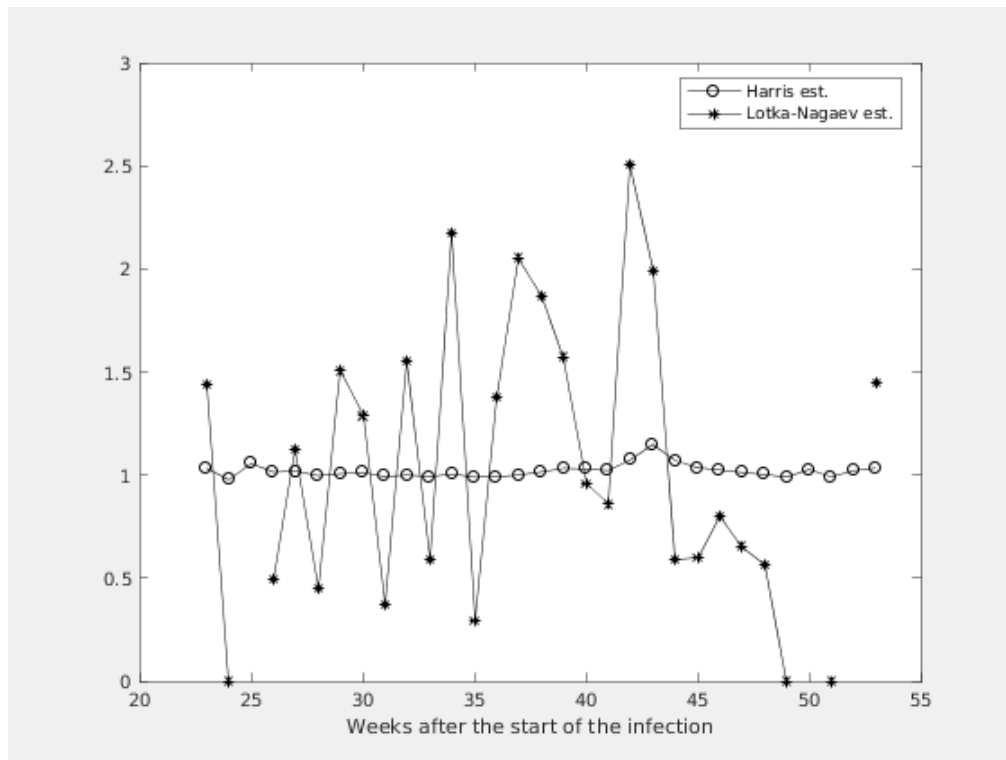


Figure 2.2. Figure

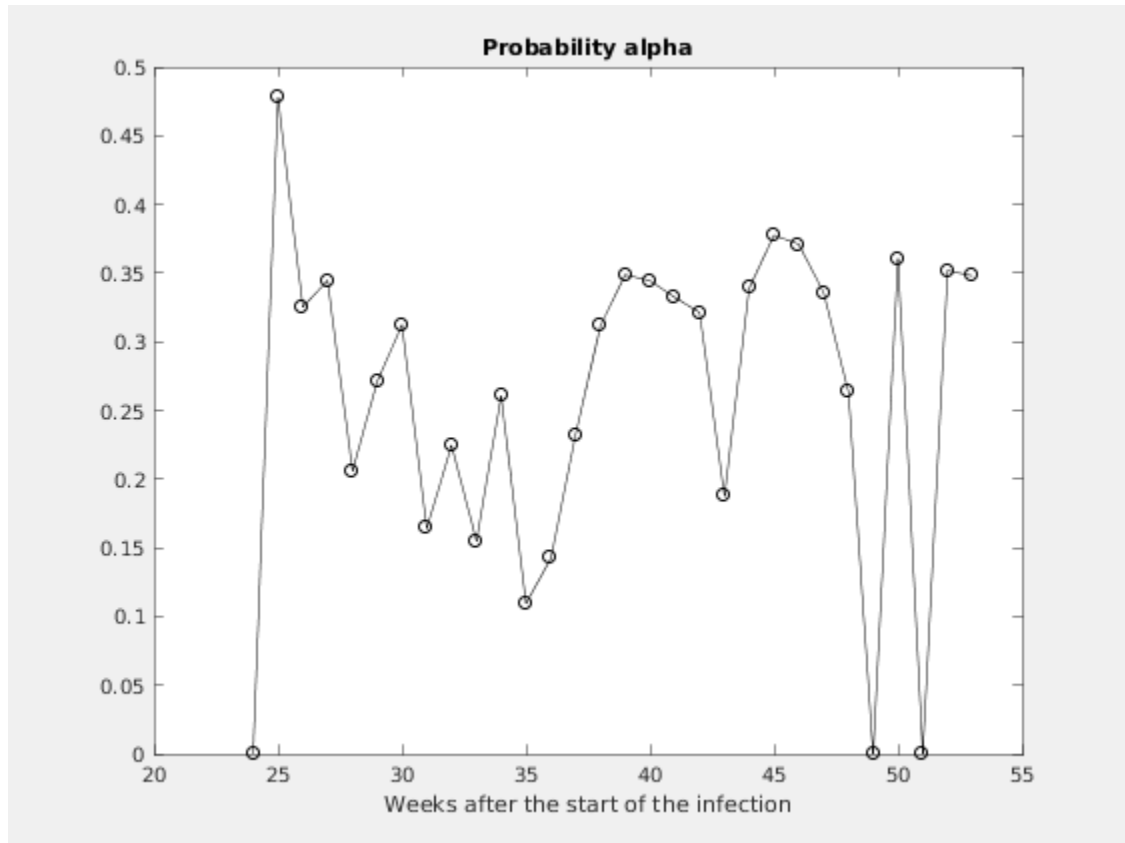


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

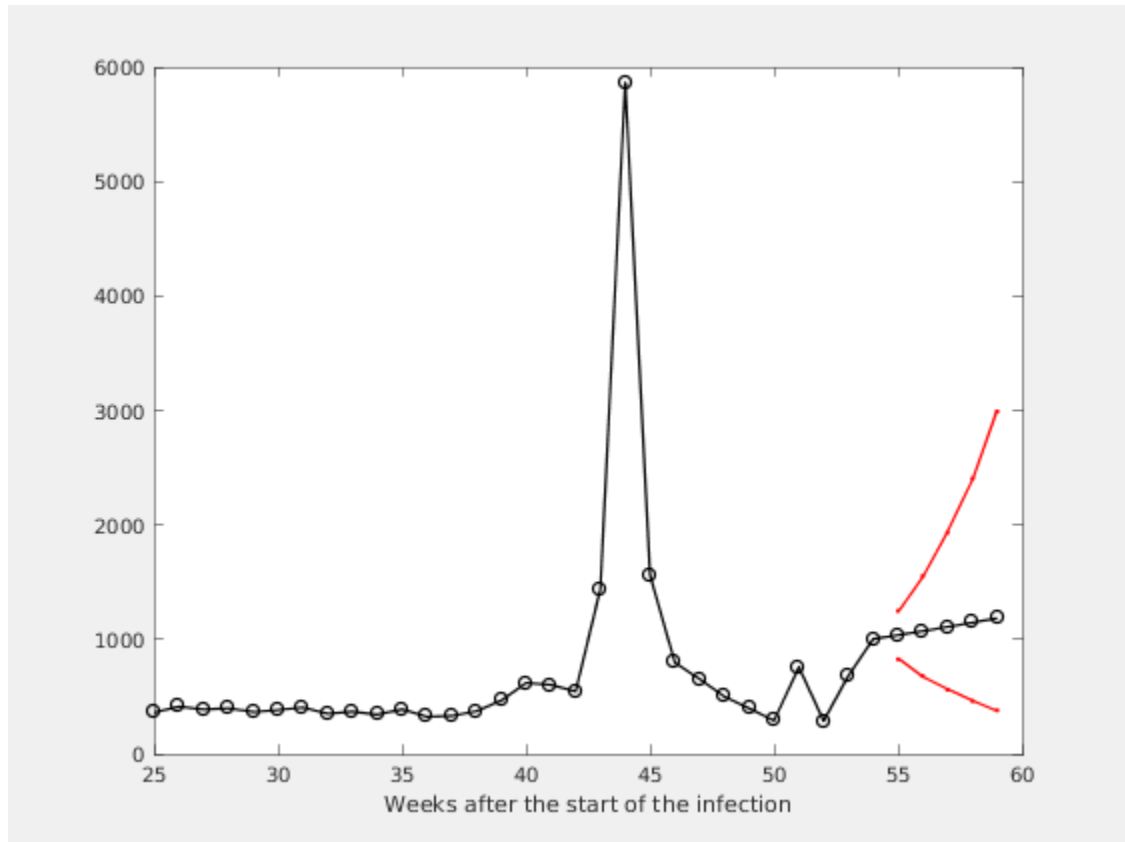
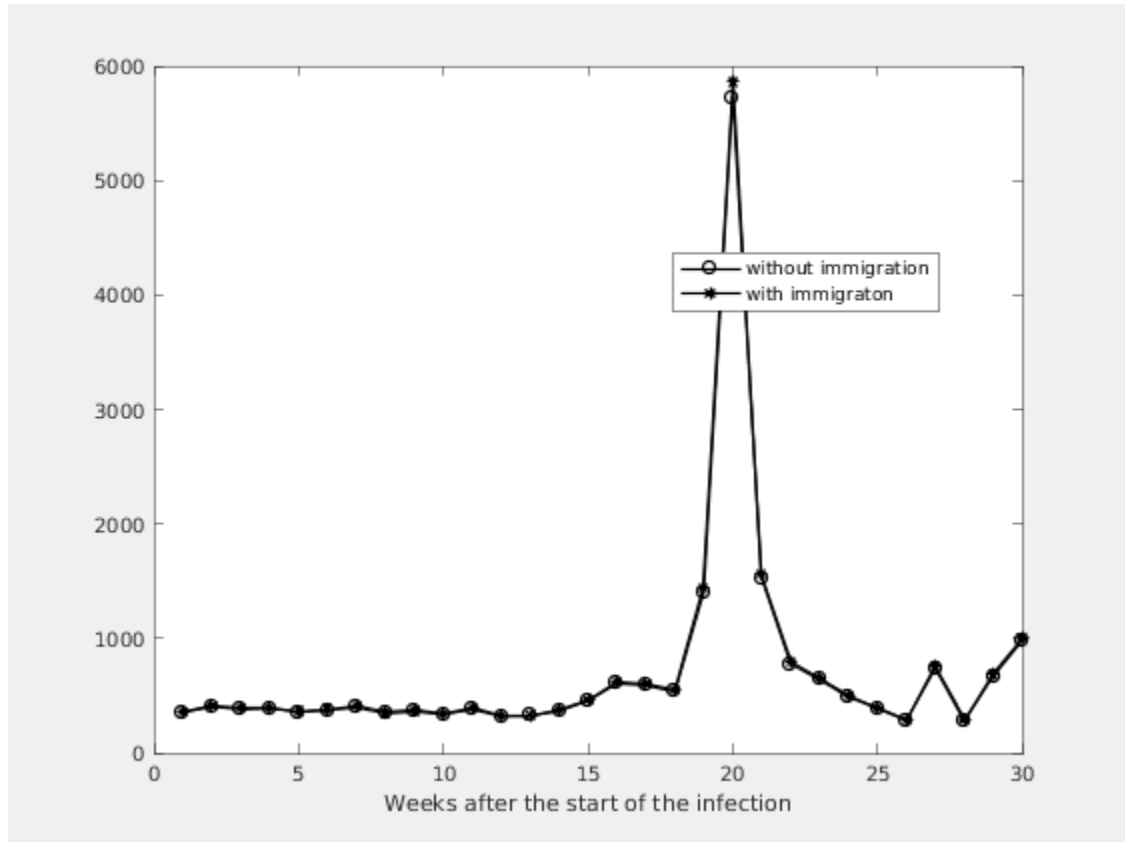


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	0.9907	0.7716 - 1.2098	0.3360	500	489
3	1.0267	0.8116 - 1.2418	0.2633	397	388
2	0.9910	0.7773 - 1.2047	0.0000	291	284
1	1.0213	0.8003 - 1.2423	0.3604	756	739
0	1.0337	0.8166 - 1.2508	0.0000	288	282