

Branching stochastic processes as models of Covid-19 epidemic development

Var208 - 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 Var208. 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

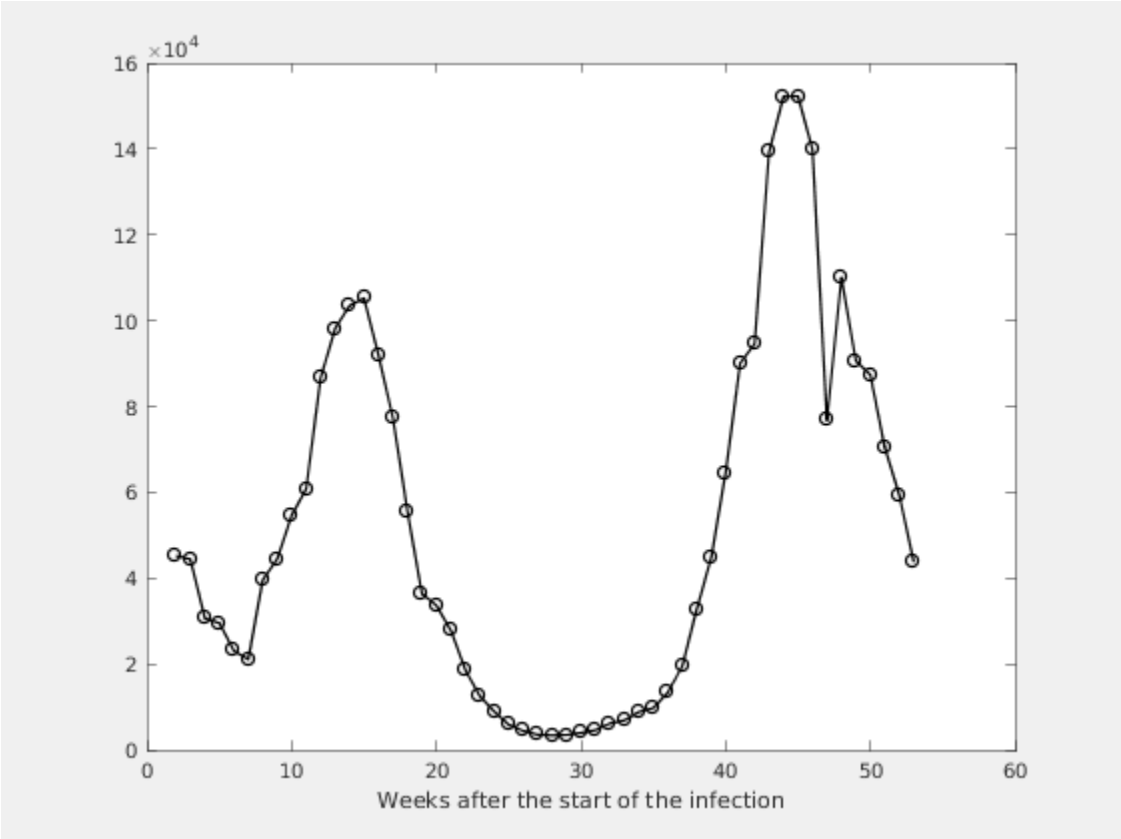
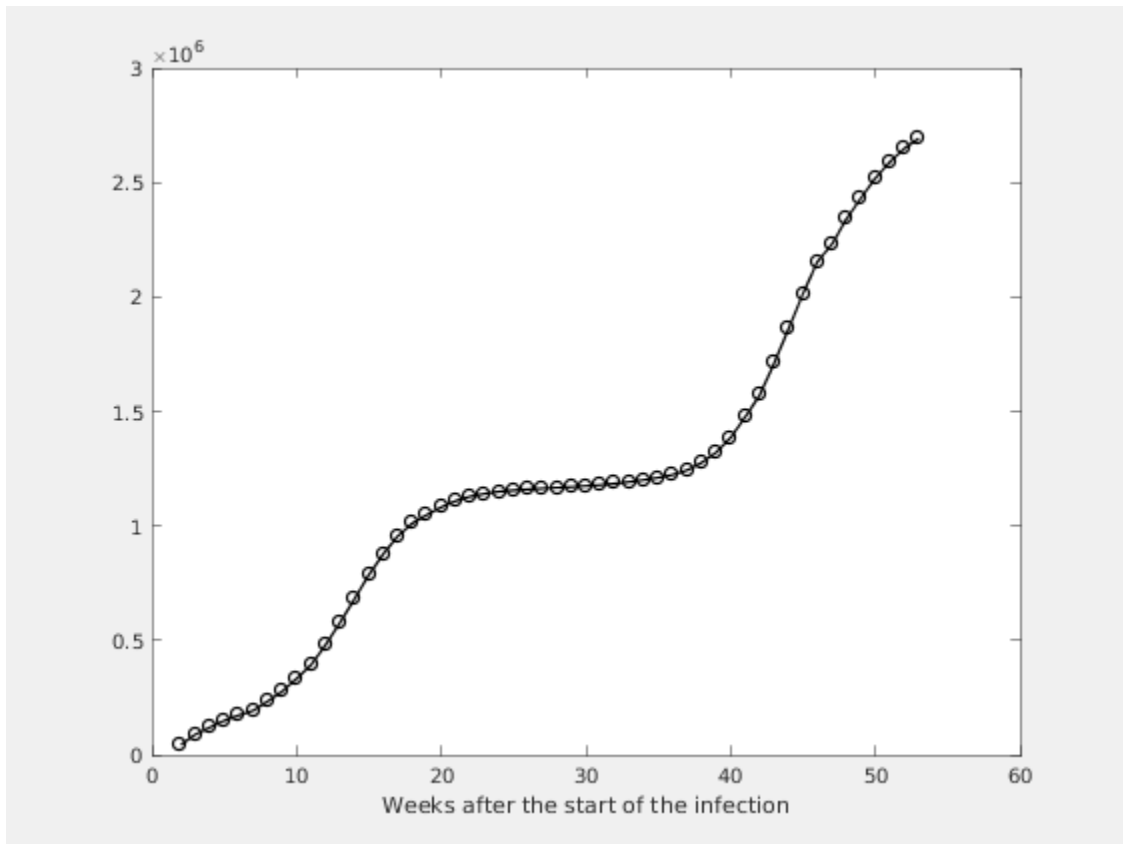


Figure 1.2. Number of the total registered cases



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

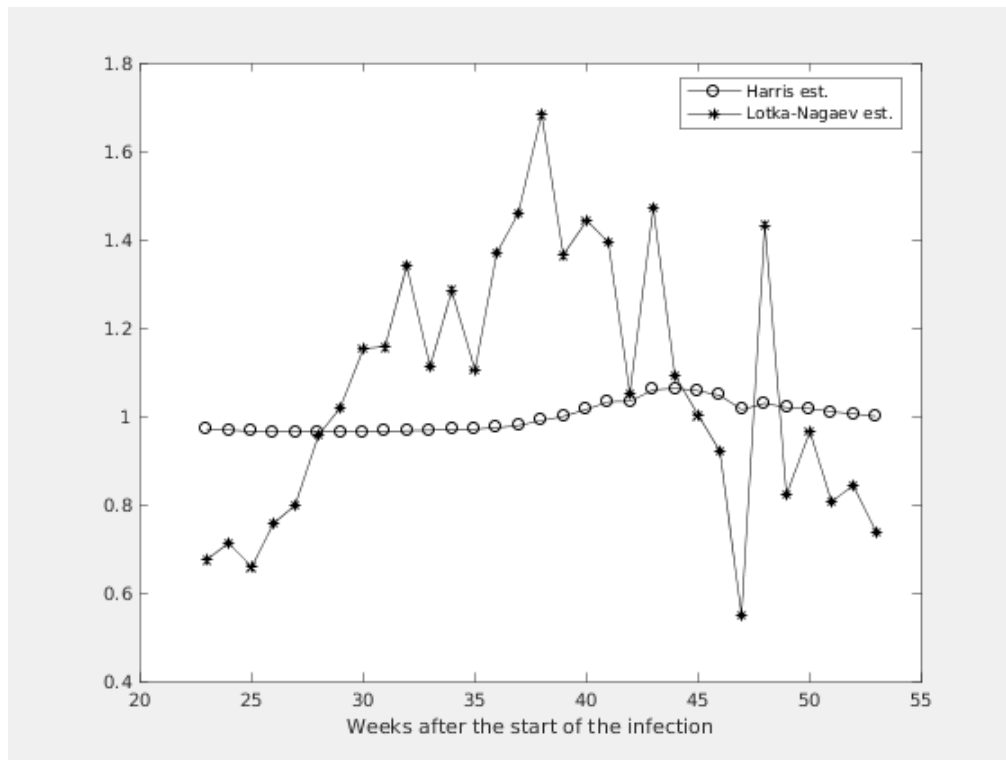


Figure 2.2. Figure

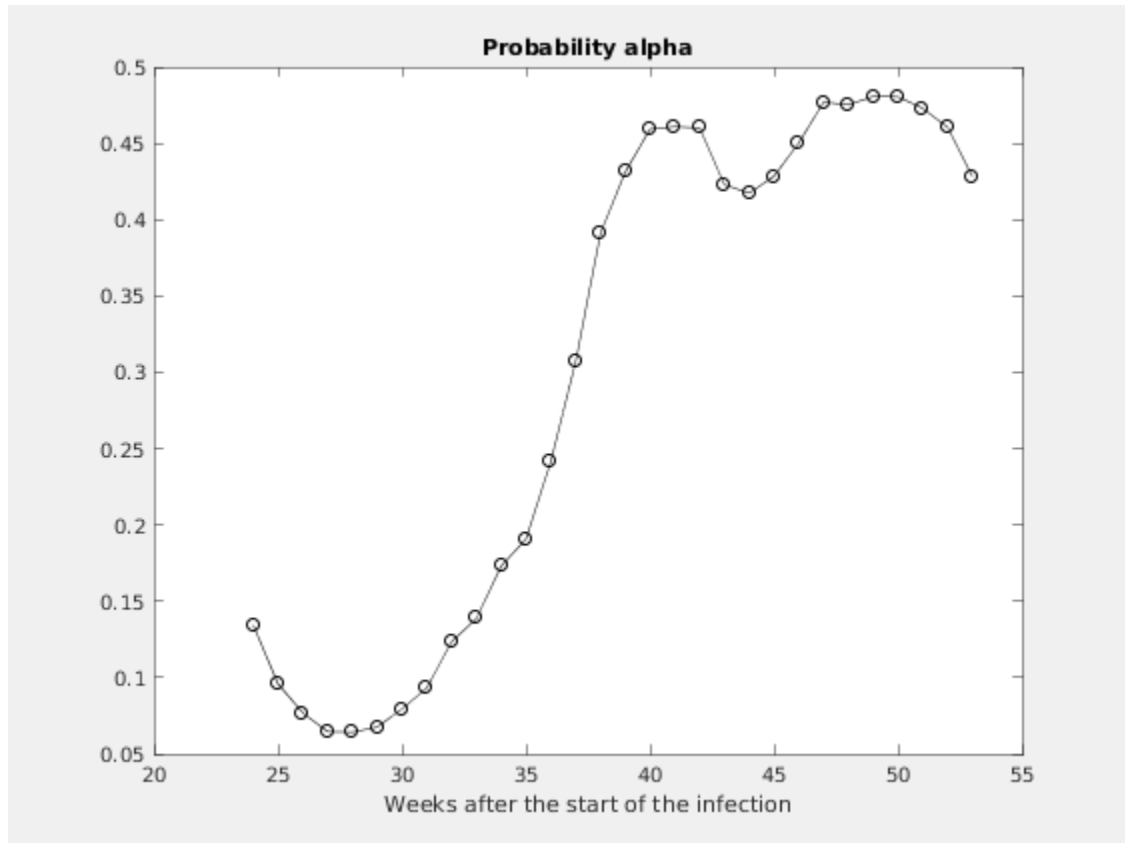


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

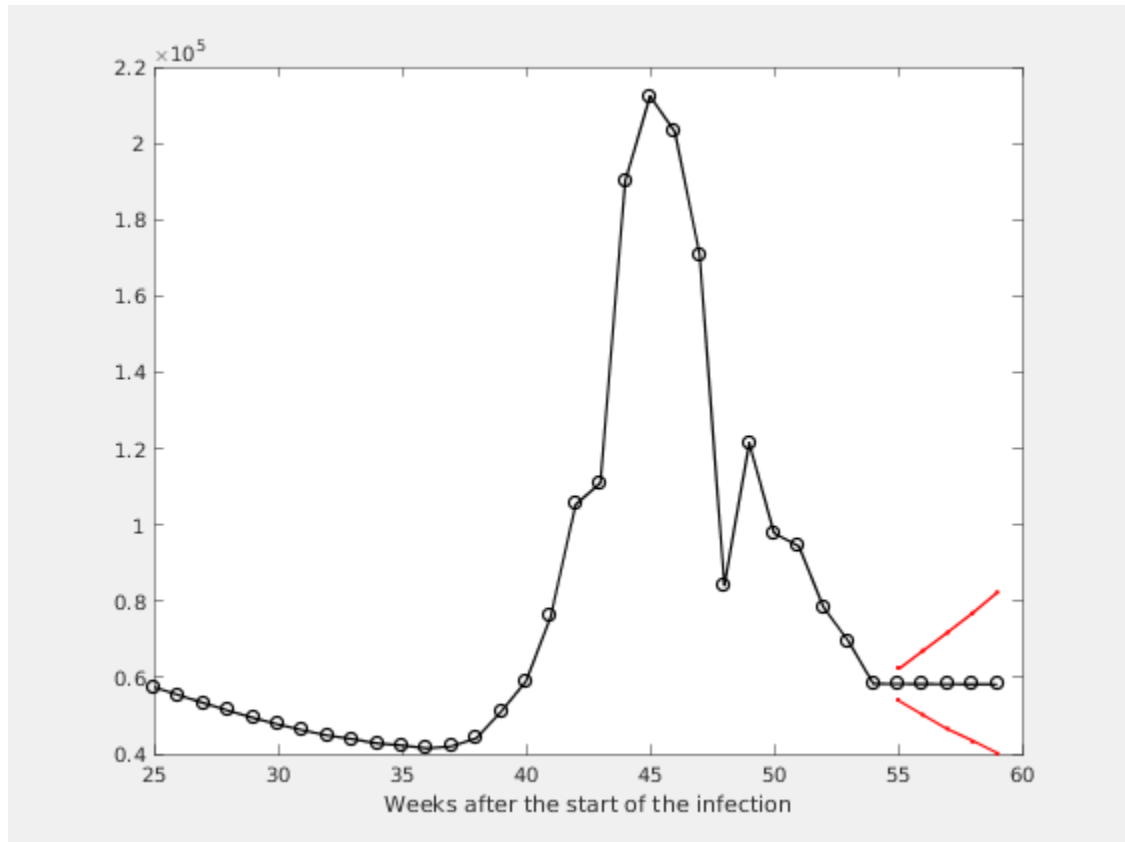
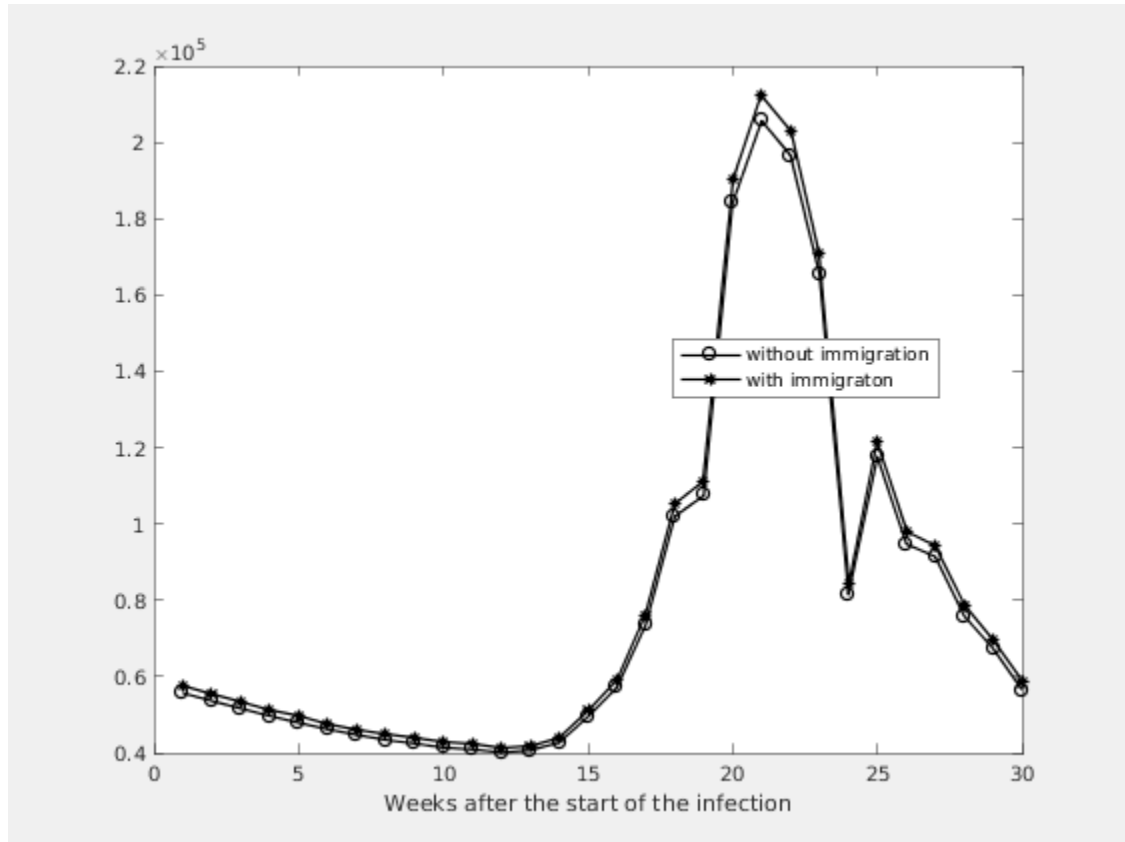


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	1.0194	0.9413 - 1.0975	0.4770	84209	81531
3	1.0173	0.9382 - 1.0964	0.4753	121466	117602
2	1.0100	0.9326 - 1.0873	0.4808	97847	94734
1	1.0055	0.9303 - 1.0807	0.4806	94427	91424
0	0.9994	0.9255 - 1.0733	0.4729	78386	75892