Branching stochastic processes as models of Covid-19 epidemic development

Var158 - week 53

N. Yanev, V. Stoimenova, D. Atanasov

Publication date 21-Nov-2021 03:22:53

Branching stochastic processes as models of Covid-19 epidemic development : Var158 - week 53

Abstract

The results presented here are obtained using the methologi proposed in the paper https://arxiv.org/abs/2004.14838 for the country Var158. The data comes from European Centre for Disease Prevention and Control available at https://opendata.ecdc.europa.eu/covid19/casedistribution/csv.

Table of Contents

List of Figures

Chapter 1. Observed Infection data

Figure 1.1. Number of the weekly reported laboratory-confirmed cases

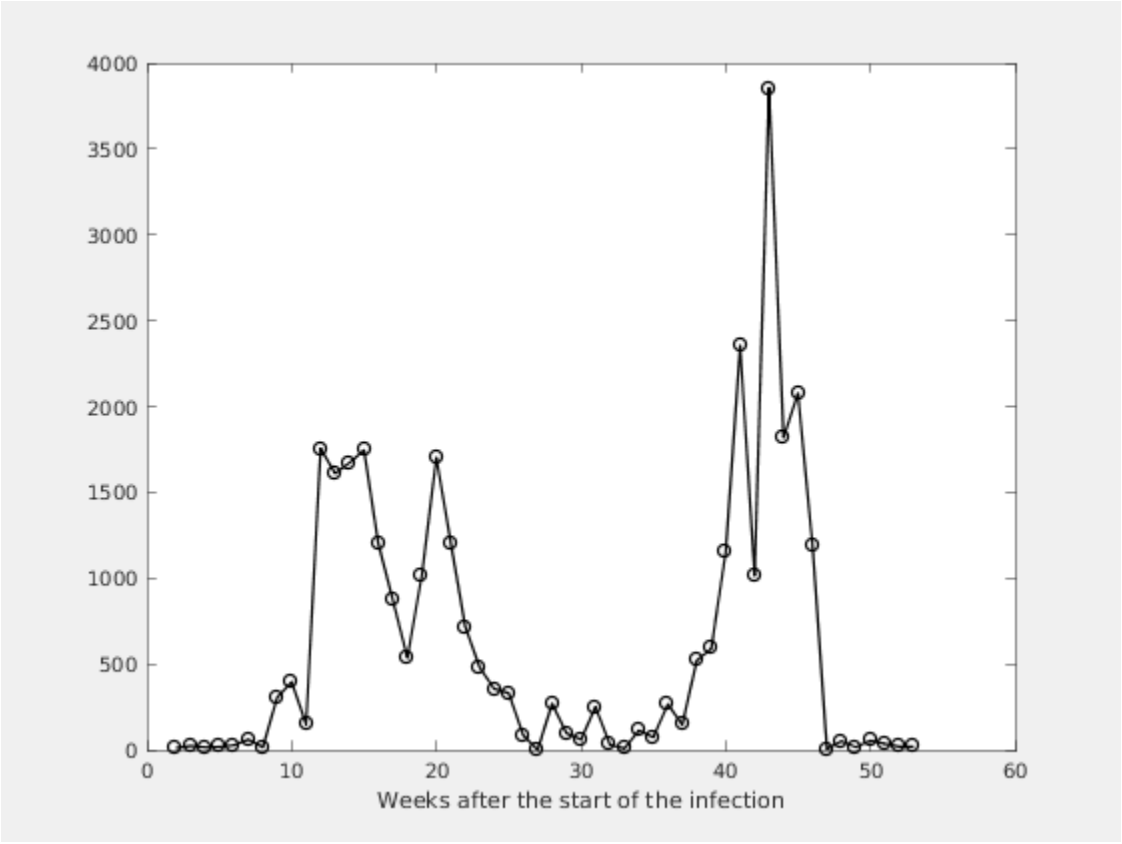
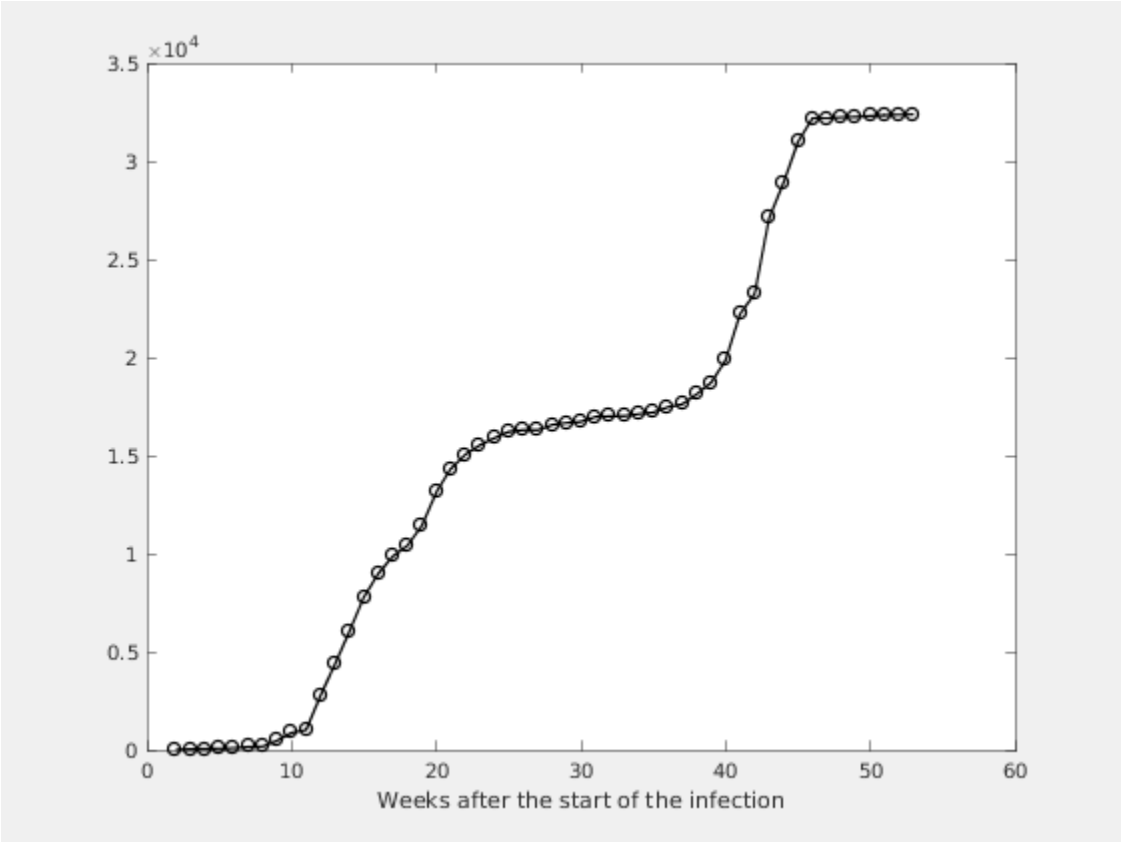


Figure 1.2. Number of the total registered cases



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

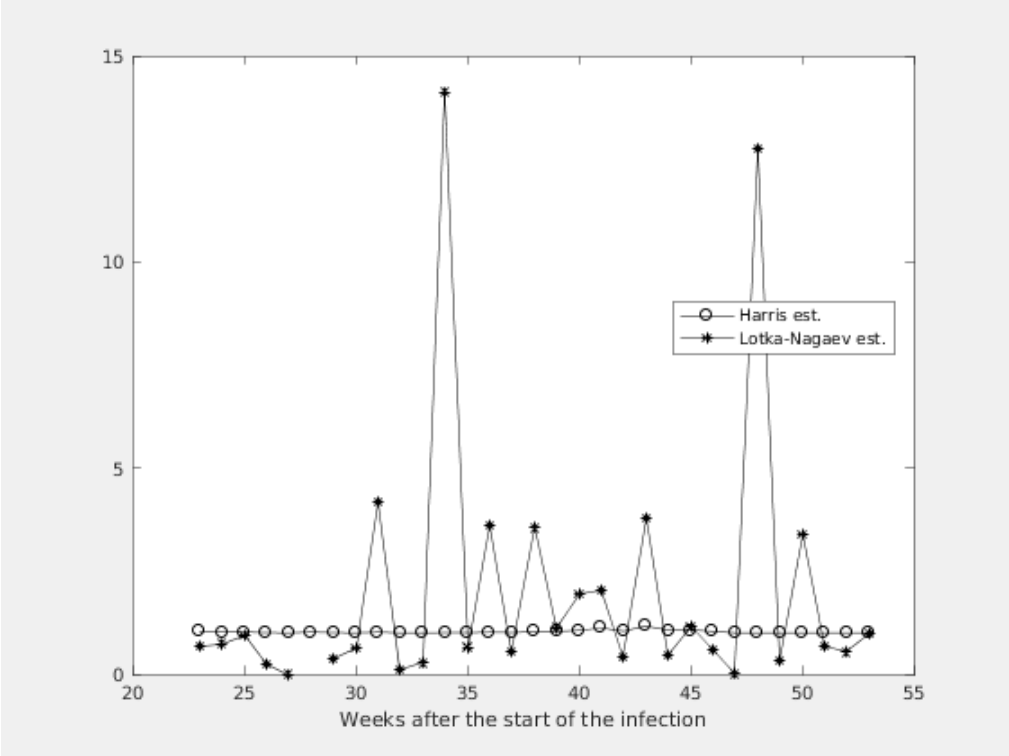


Figure 2.2. Figure

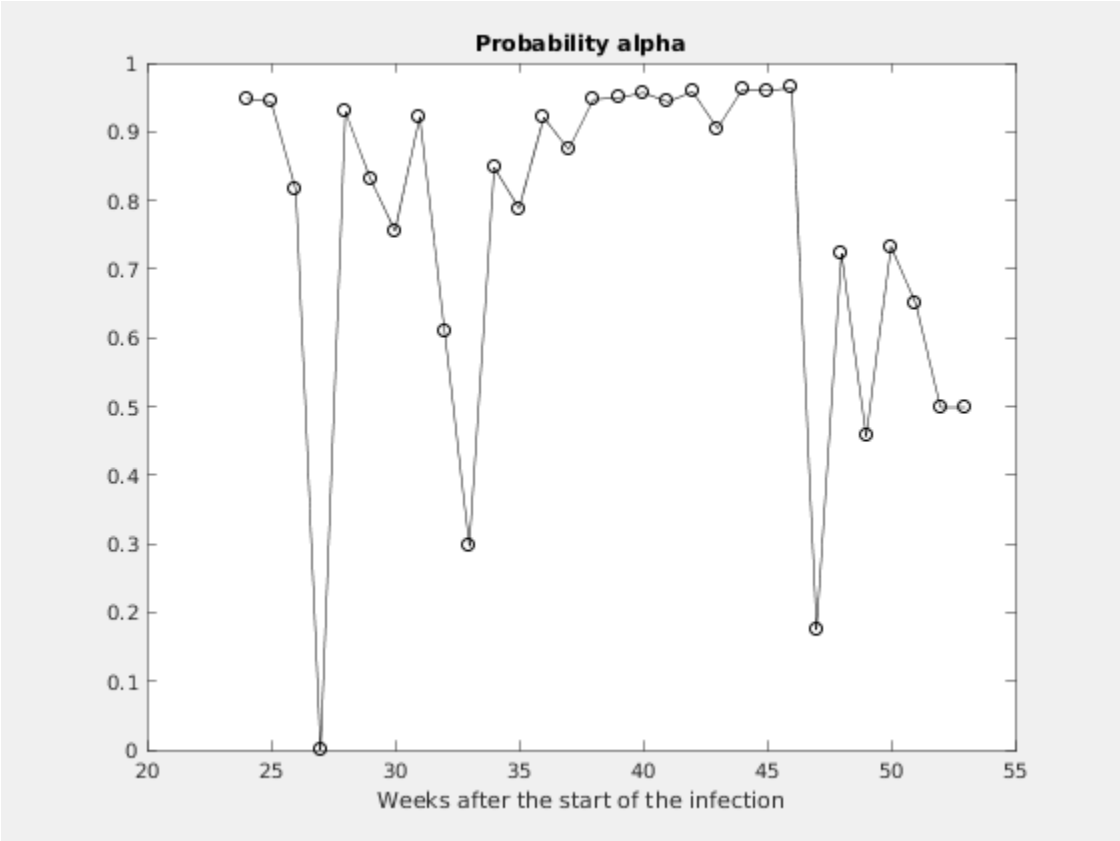


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

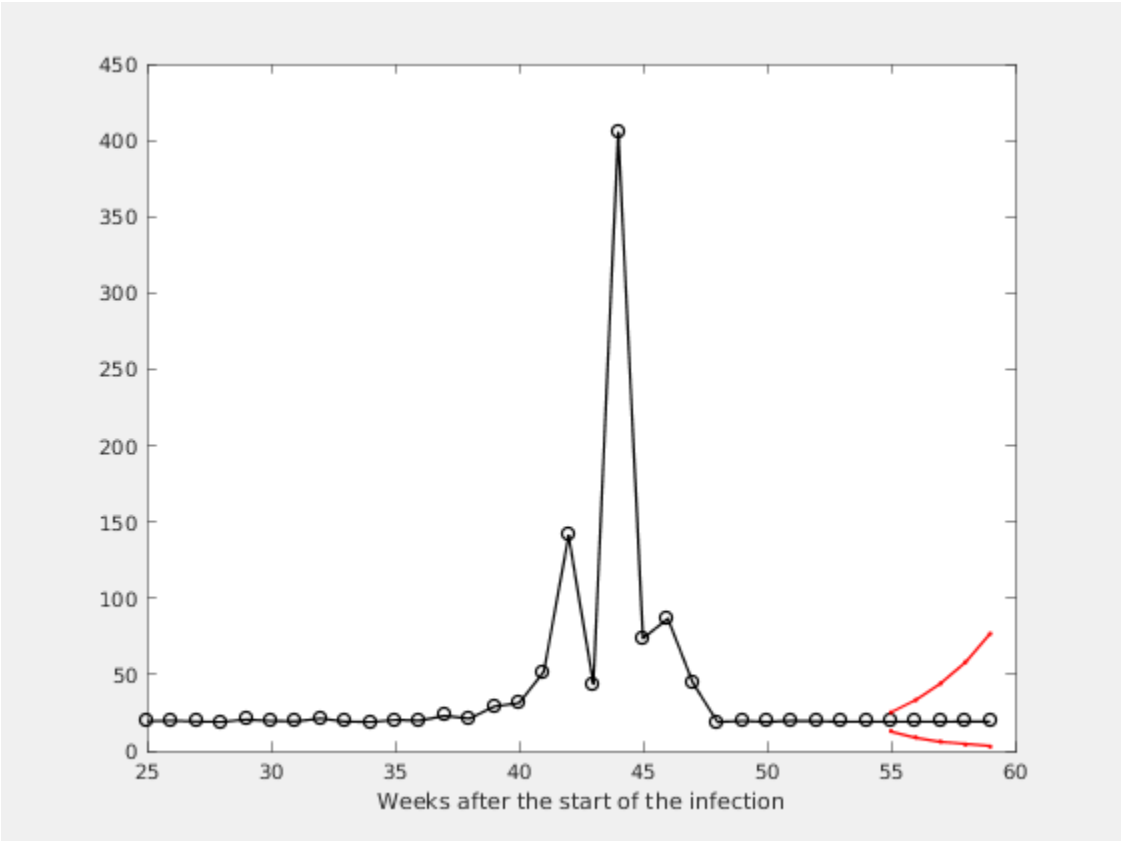
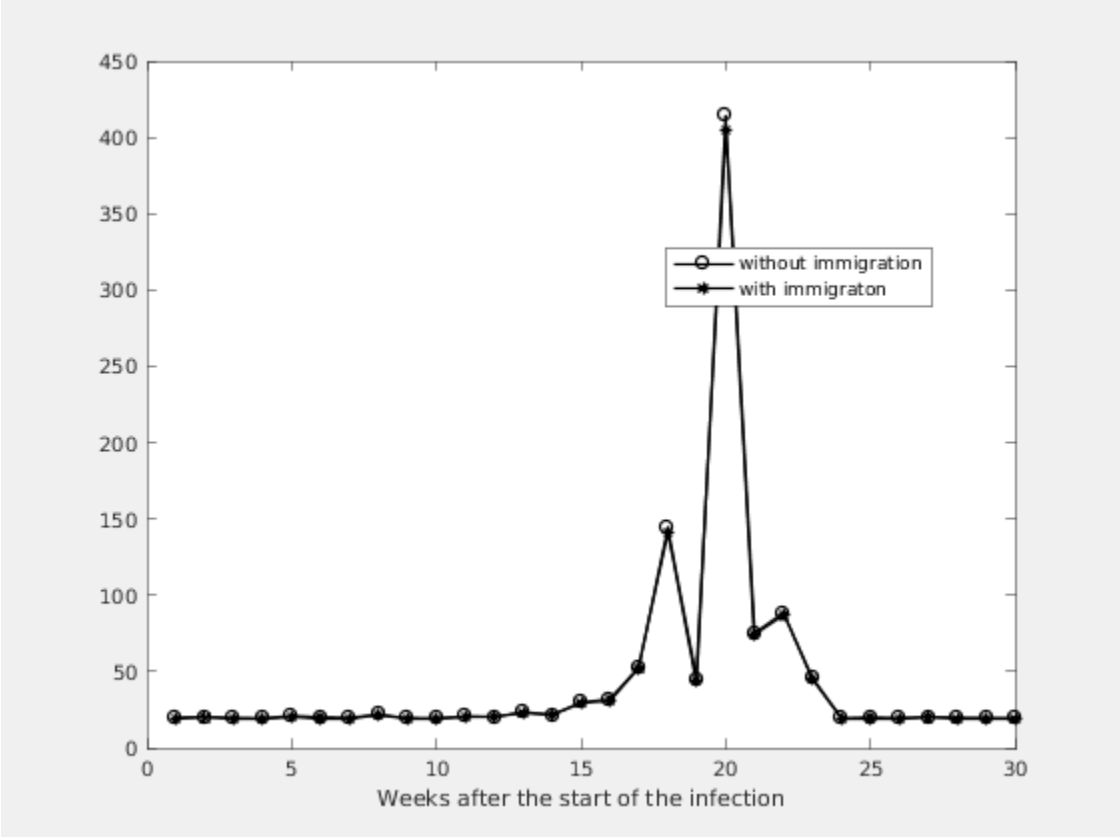


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	1.0001	0.6605 - 1.3398	0.1748	19	19
3	1.0013	0.6633 - 1.3393	0.7225	20	20
2	1.0007	0.6666 - 1.3349	0.4563	19	19
1	1.0002	0.6694 - 1.3311	0.7329	20	20
0	1.0002	0.6731 - 1.3274	0.6498	19	20