

Branching stochastic processes as models of Covid-19 epidemic development

Pakistan - 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 Pakistan. 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

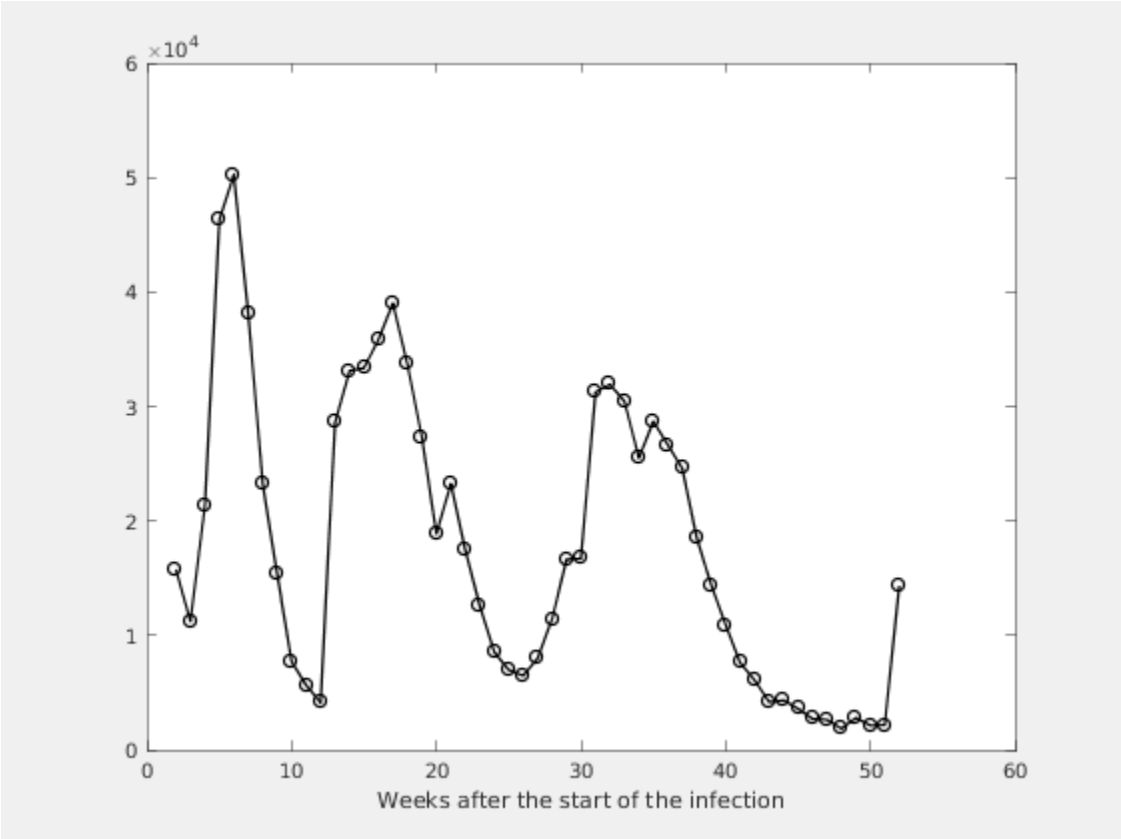
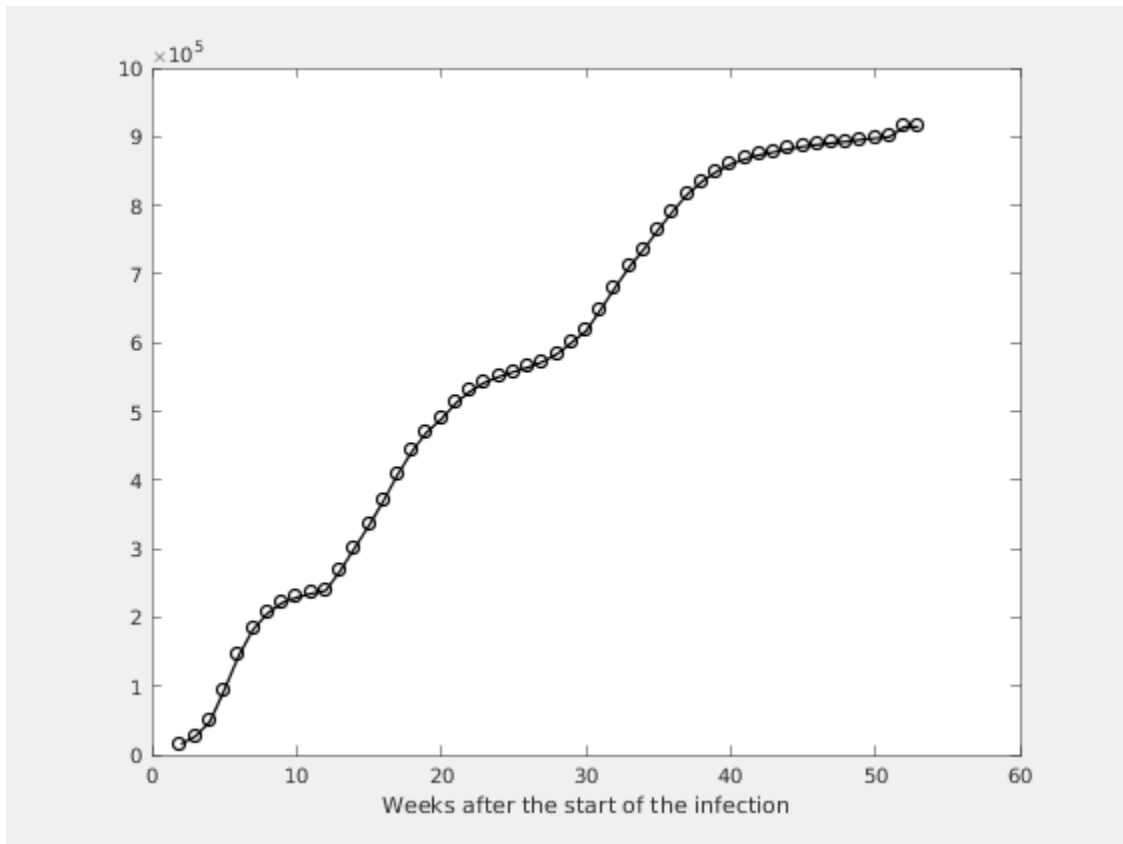


Figure 1.2. Number of the total registered cases



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

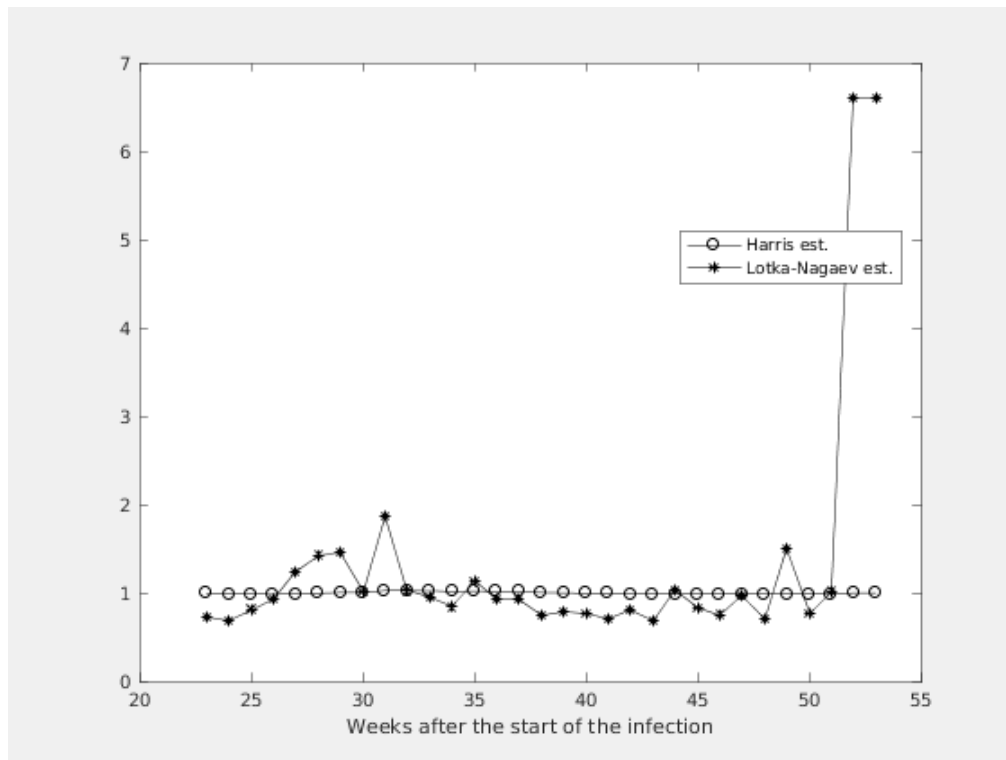


Figure 2.2. Figure

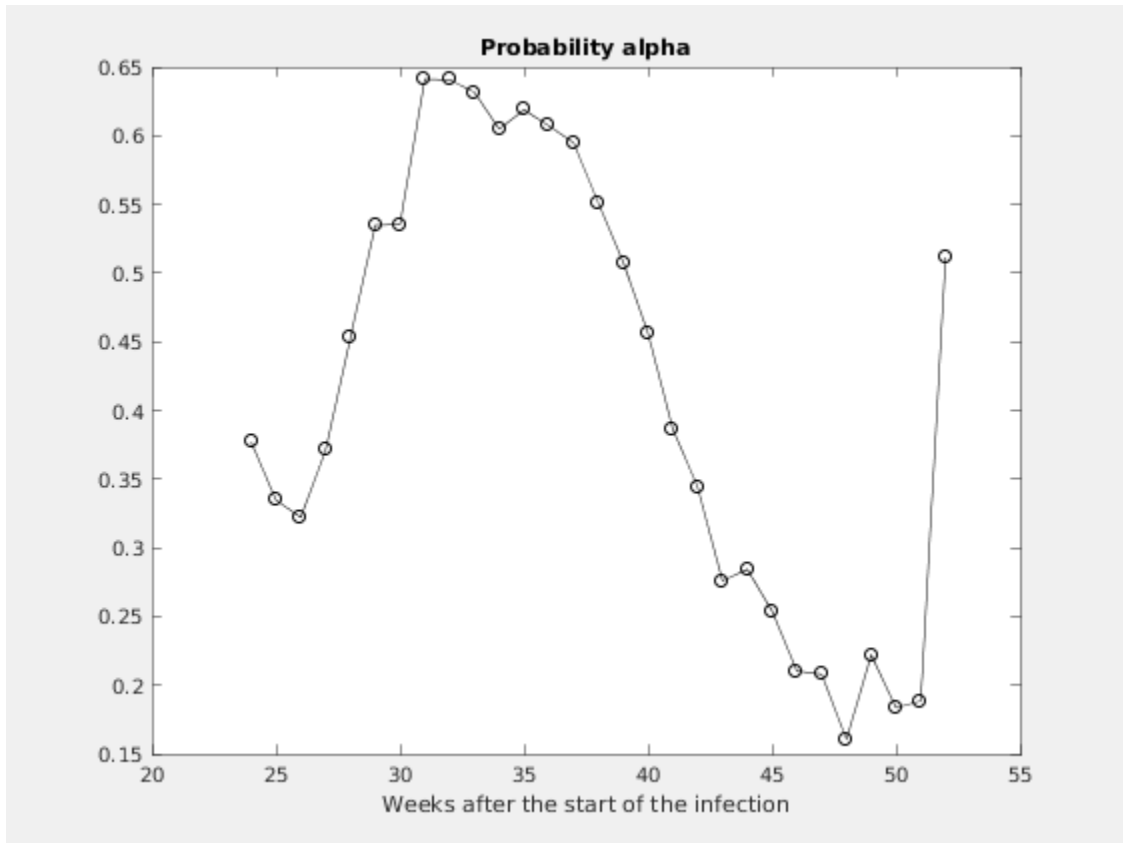


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

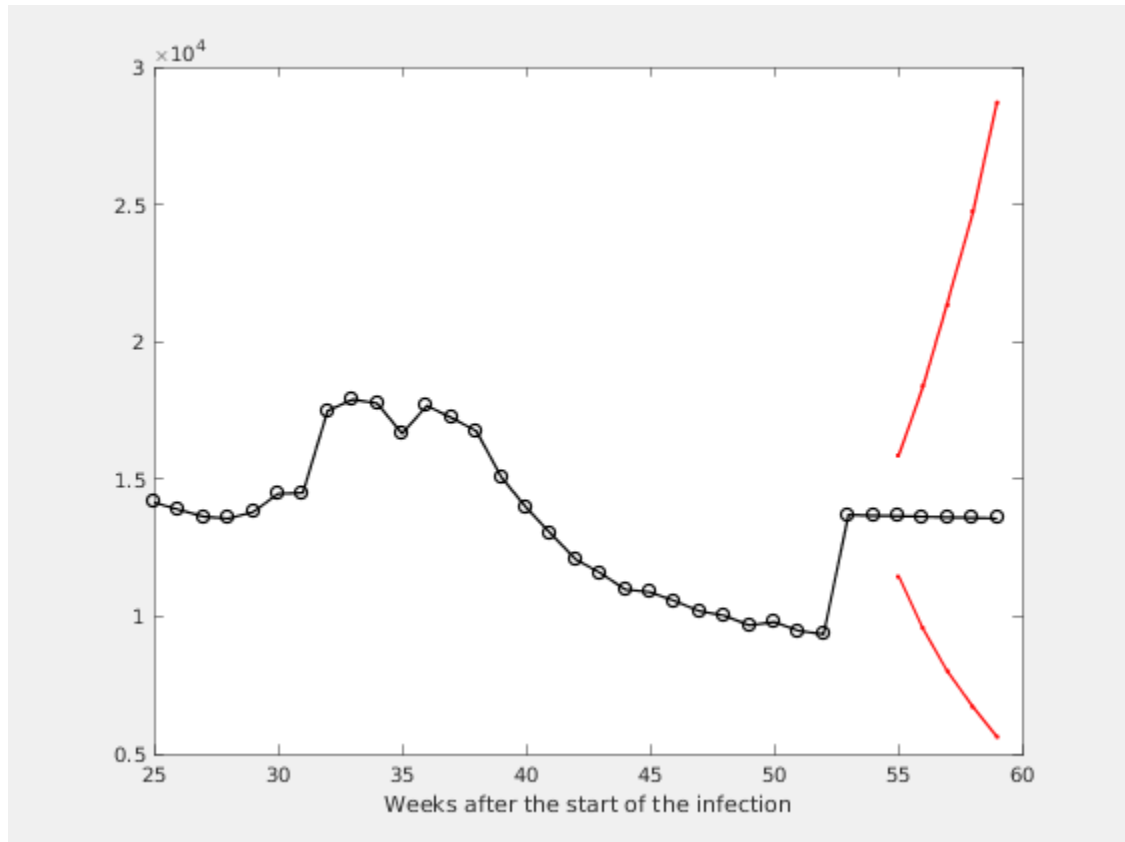
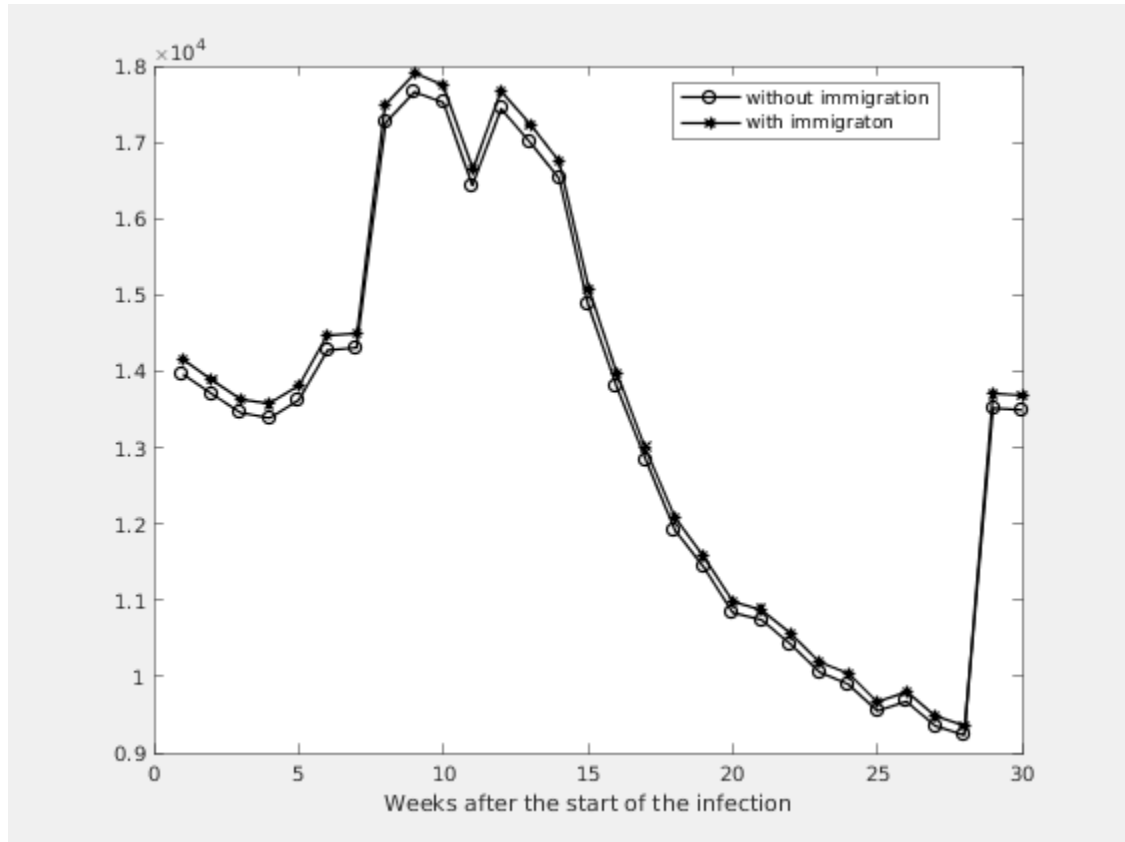


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	0.9855	0.8349 - 1.1361	0.2080	10032	9899
3	0.9848	0.8360 - 1.1336	0.1609	9677	9549
2	0.9849	0.8377 - 1.1321	0.2219	9803	9673
1	0.9984	0.8529 - 1.1440	0.1836	9479	9353
0	0.9984	0.8545 - 1.1423	0.1885	9356	9232