Branching stochastic processes as models of Covid-19 epidemic development

Puerto_Rico - 20201214

N. Yanev, V. Stoimenova, D. Atanasov

Publication date 27-Feb-2021 03:12:59

Branching stochastic processes as models of Covid-19 epidemic development : Puerto_Rico - 20201214

Abstract

The results presented here are obtained using the methologi proposed in the paper https://arxiv.org/abs/2004.14838 for the country Puerto_Rico. 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 daily reported laboratory-confirmed cases

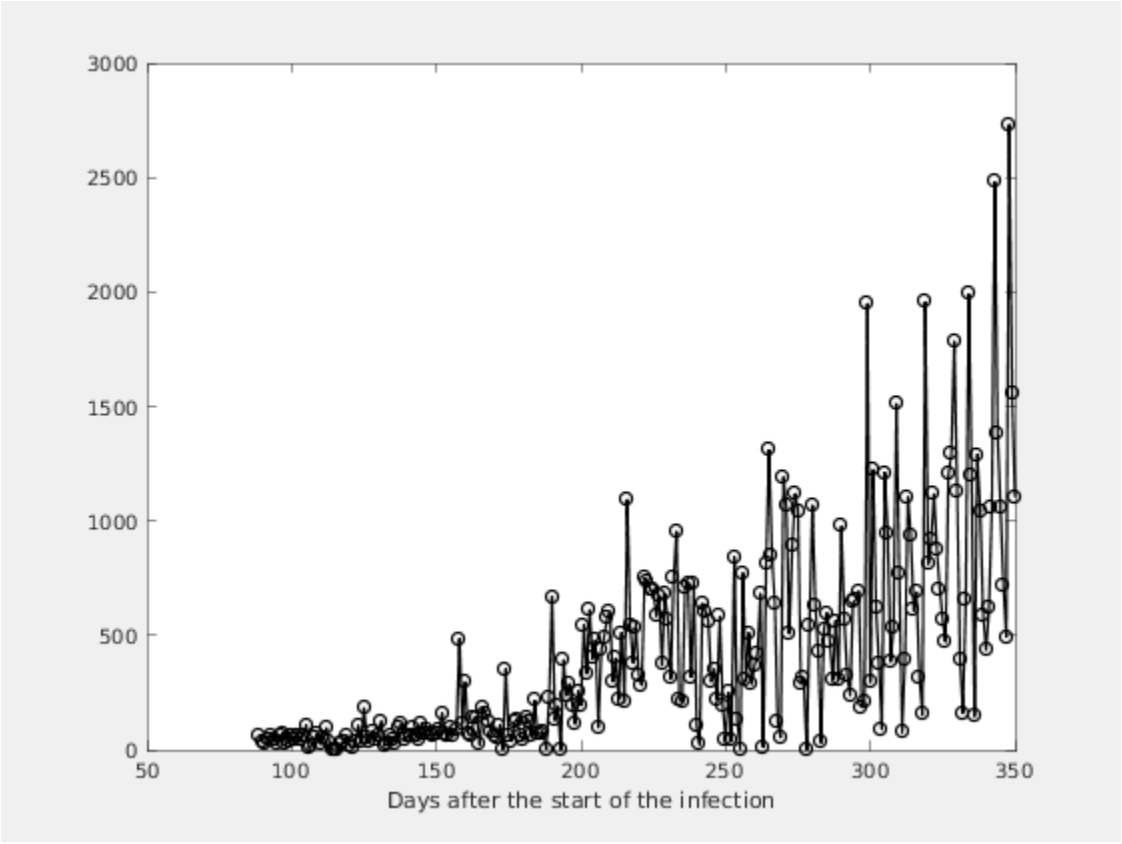
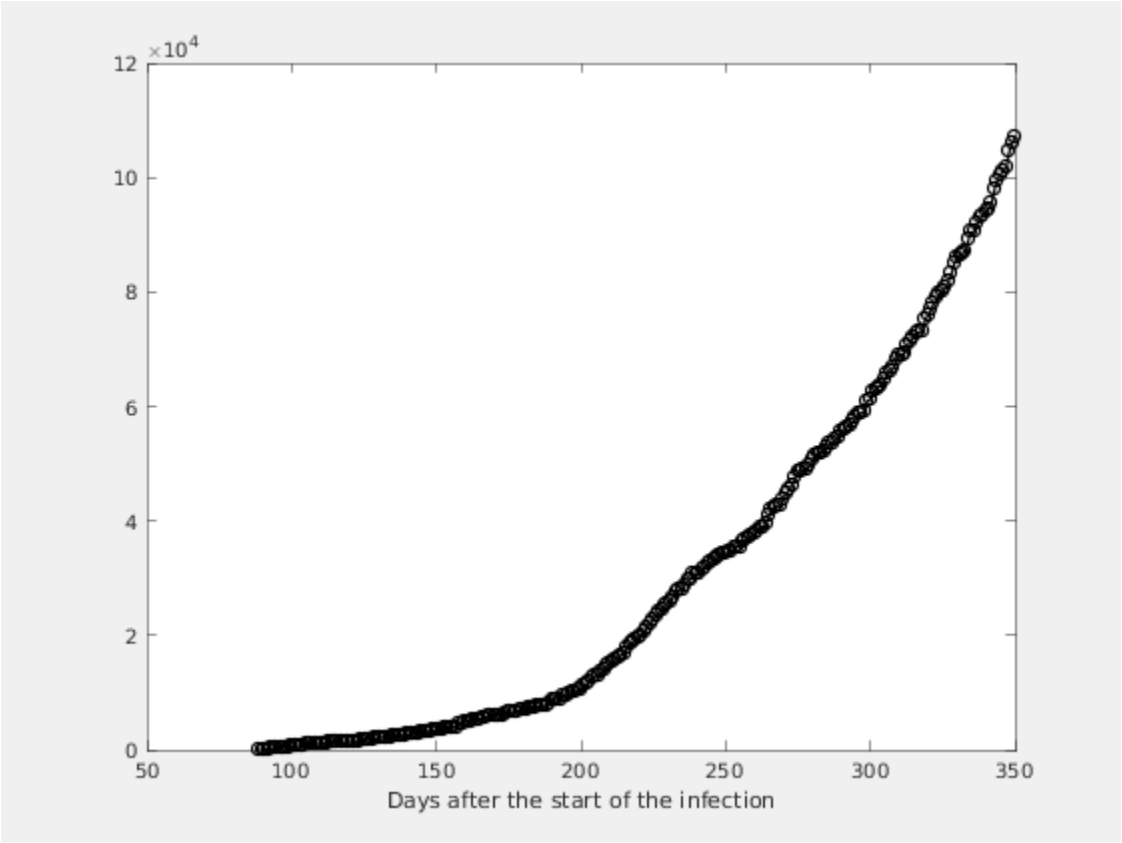


Figure 1.2. Number of the total registered cases



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

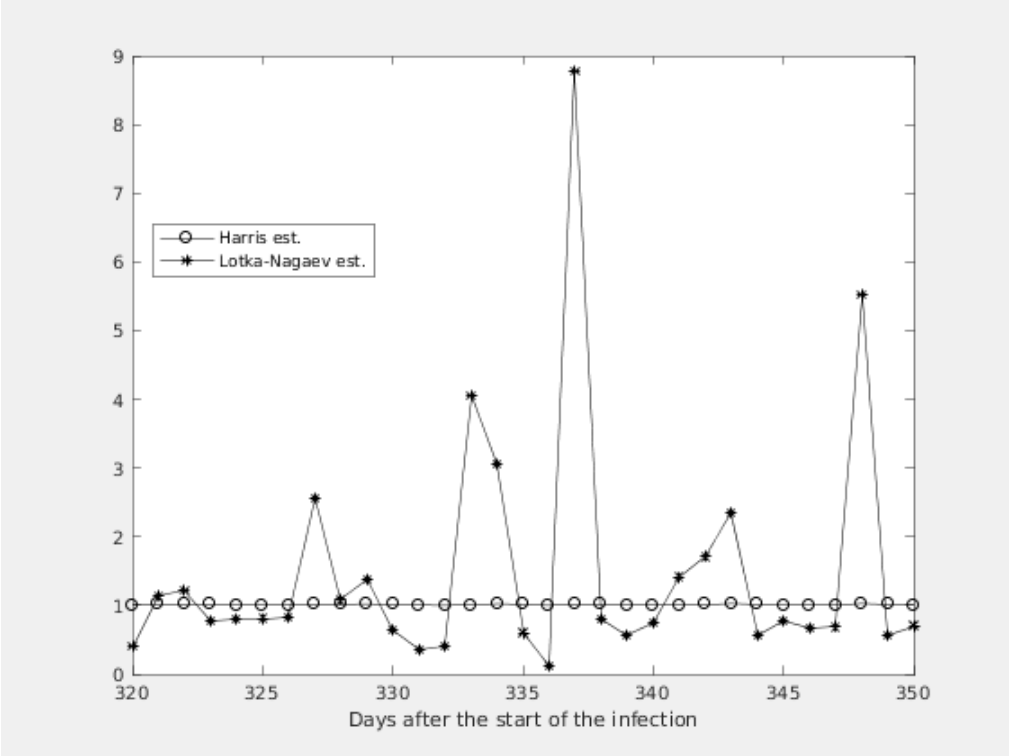


Figure 2.2. Figure

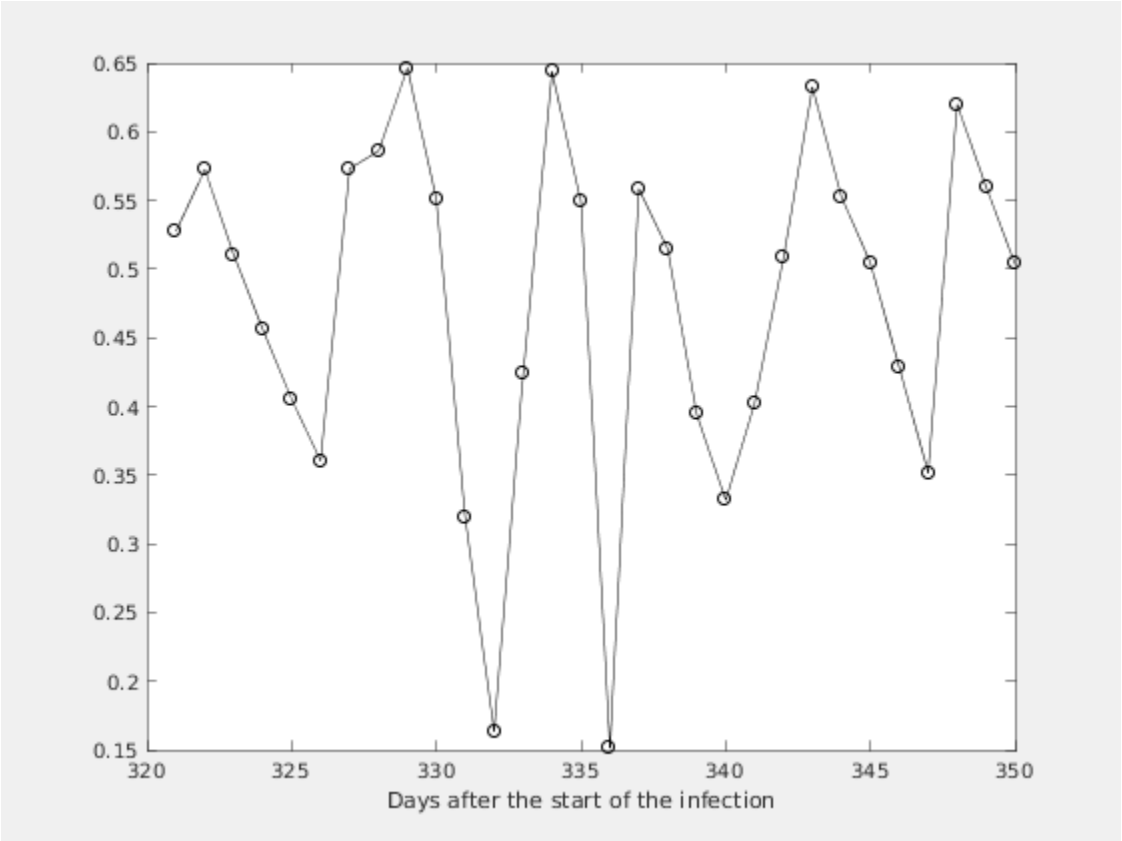


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

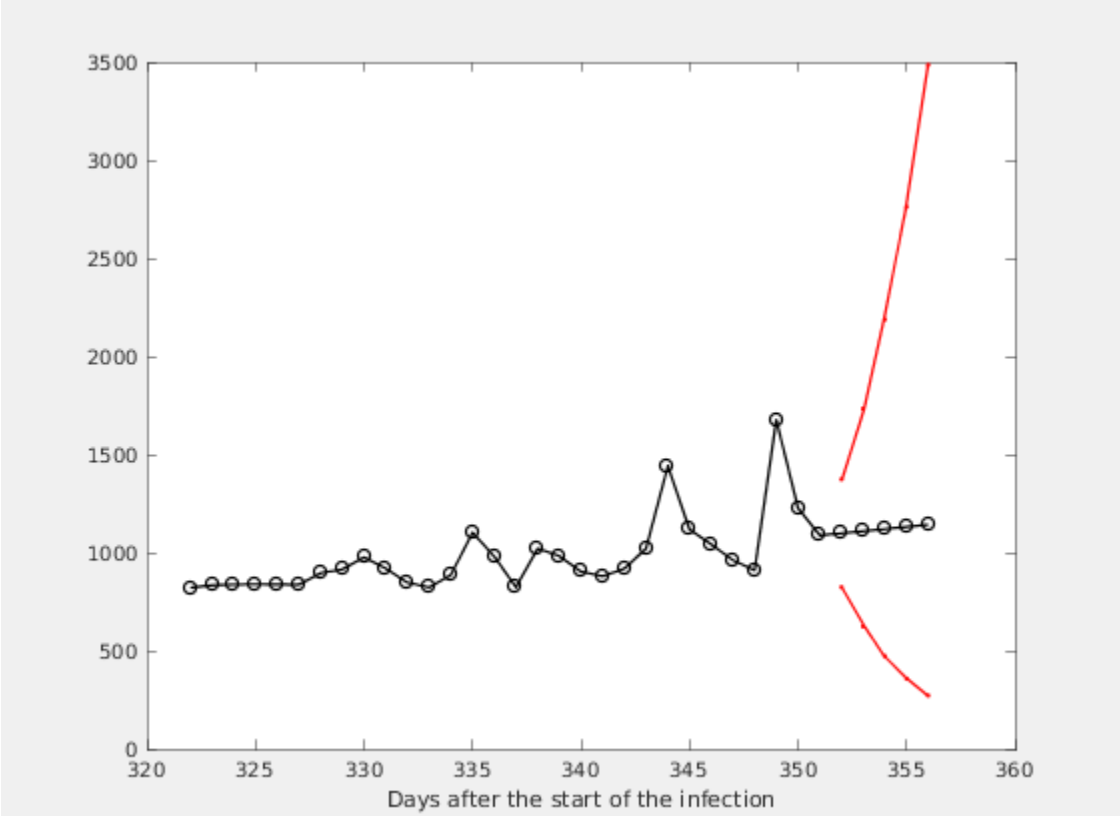
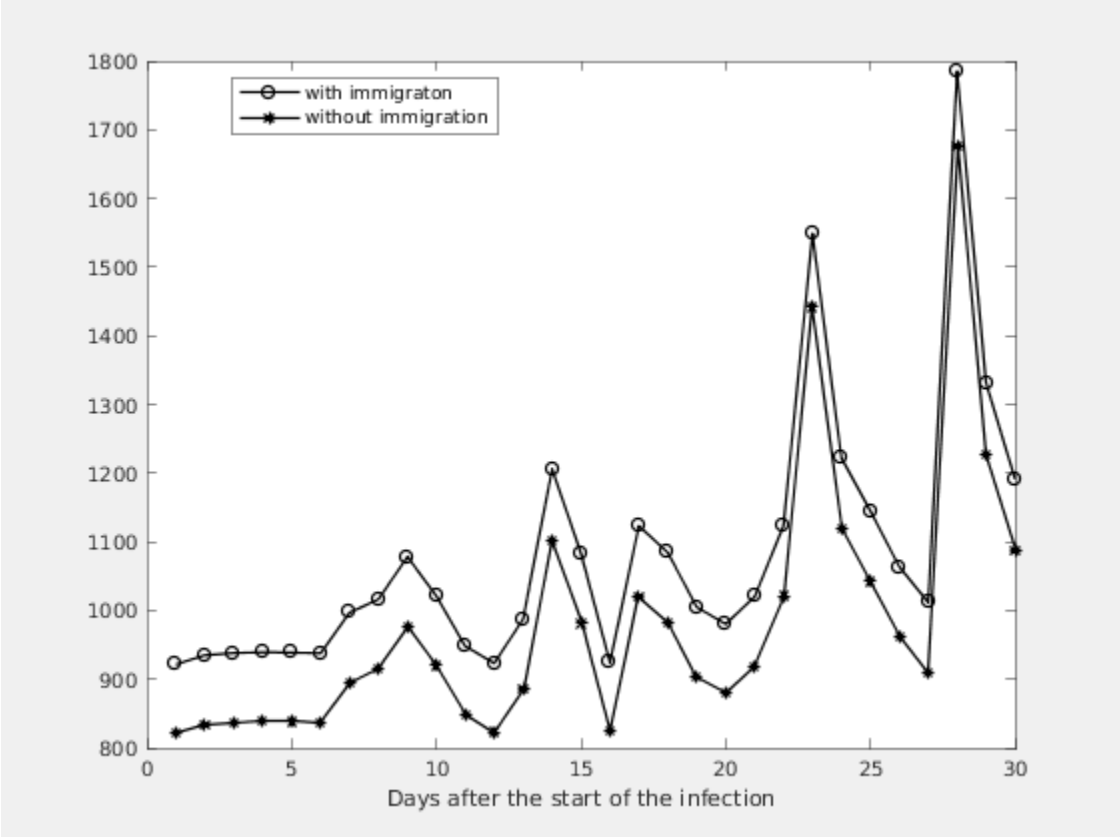


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	M1	A1
4	1.0065	0.7443 - 1.2688	0.5527	1119	1222
3	1.0042	0.7443 - 1.2642	0.5047	1042	1145
2	1.0262	0.7681 - 1.2843	0.4284	962	1064
1	1.0143	0.7577 - 1.2710	0.3517	910	1012
0	1.0098	0.7514 - 1.2683	0.6197	1675	1785