Branching stochastic processes as models of Covid-19 epidemic development

PuertoRico - week 53

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Abstract

The results presented here are obtained using the methologi proposed in the paper https://arxiv.org/abs/2004.14838 for the country PuertoRico. 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
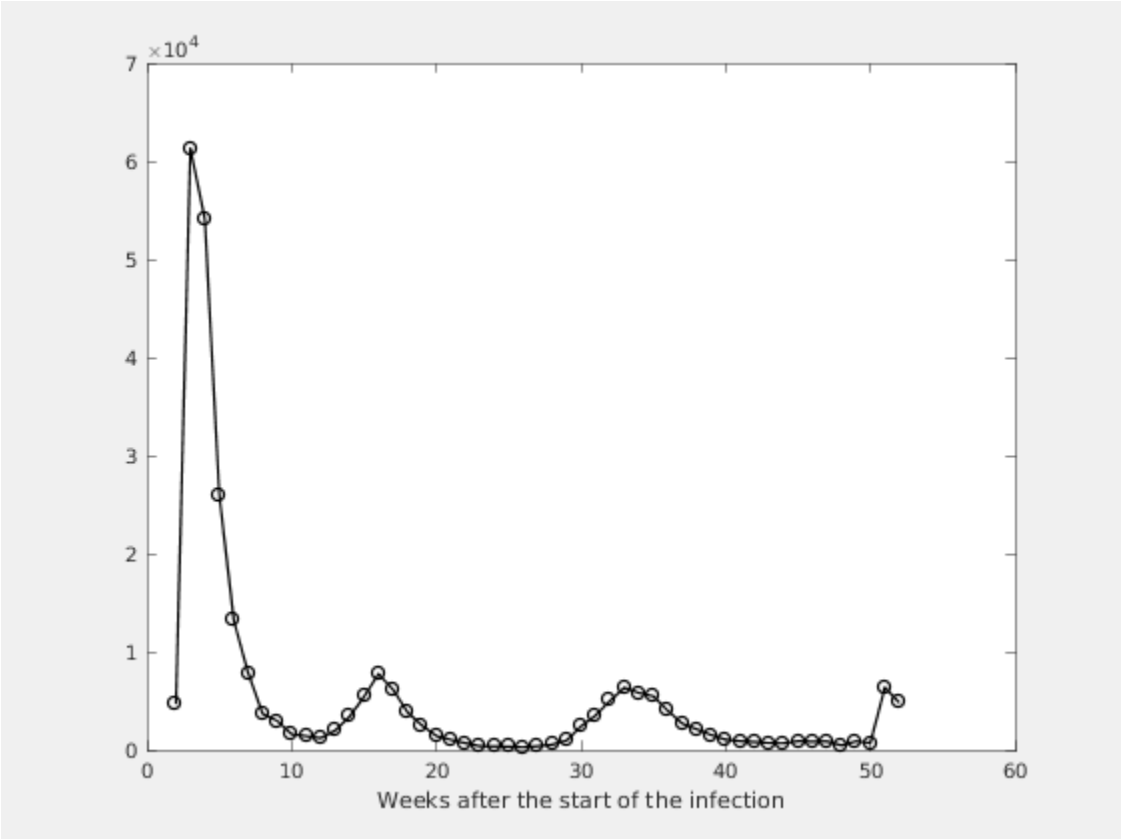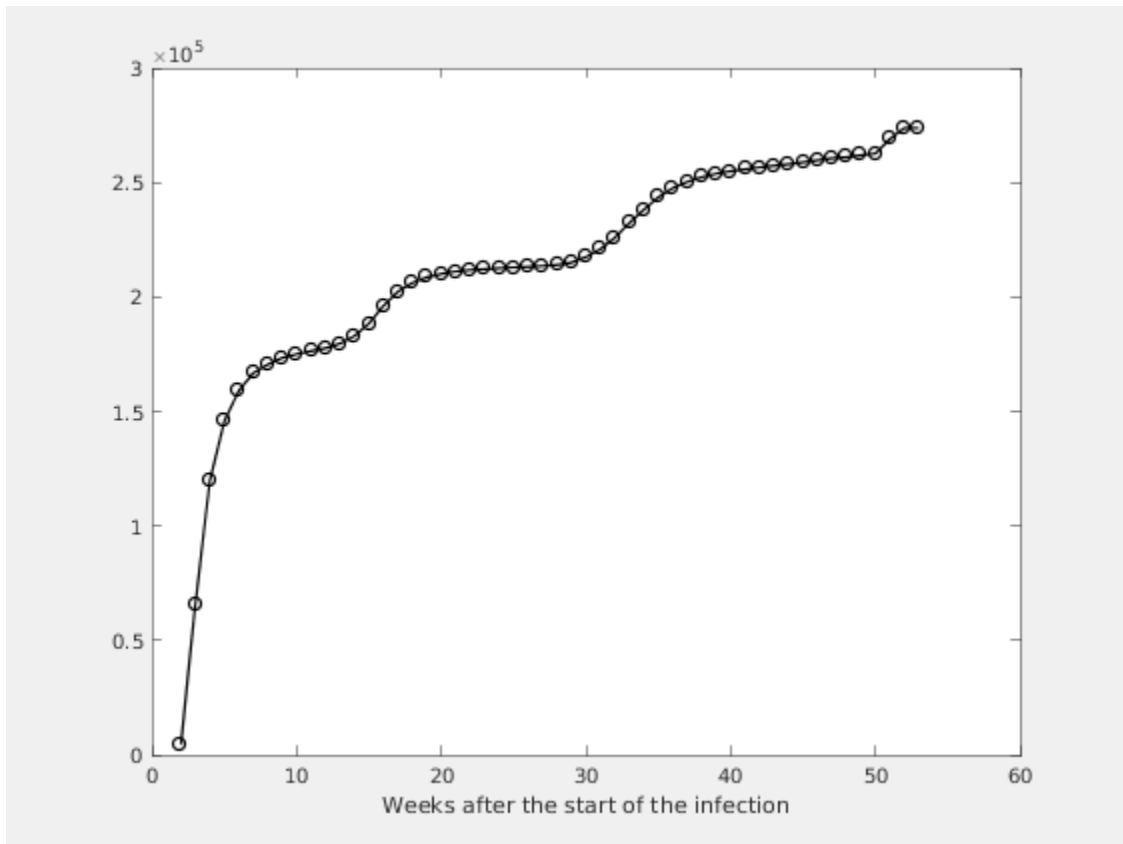
Figure 1.2. Number of the total registered cases

Chapter 2. Estimating of the main parameter and some predictions

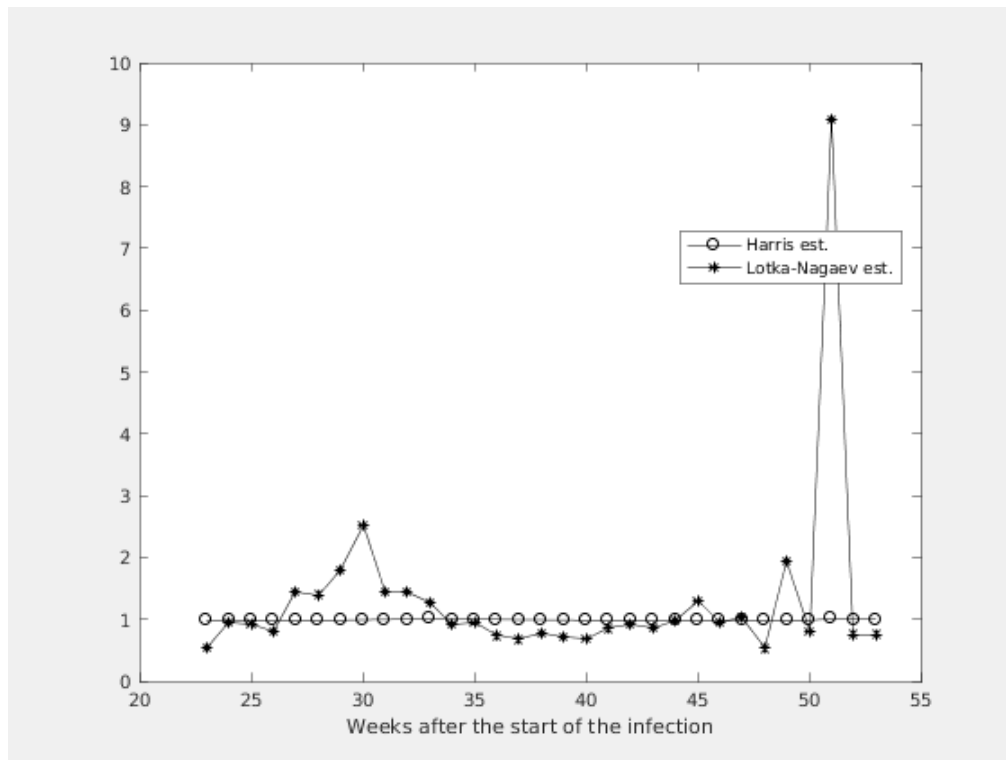**Figure 2.1. The Lotka-Nagaev and the Harris type estimator of the growth rate**
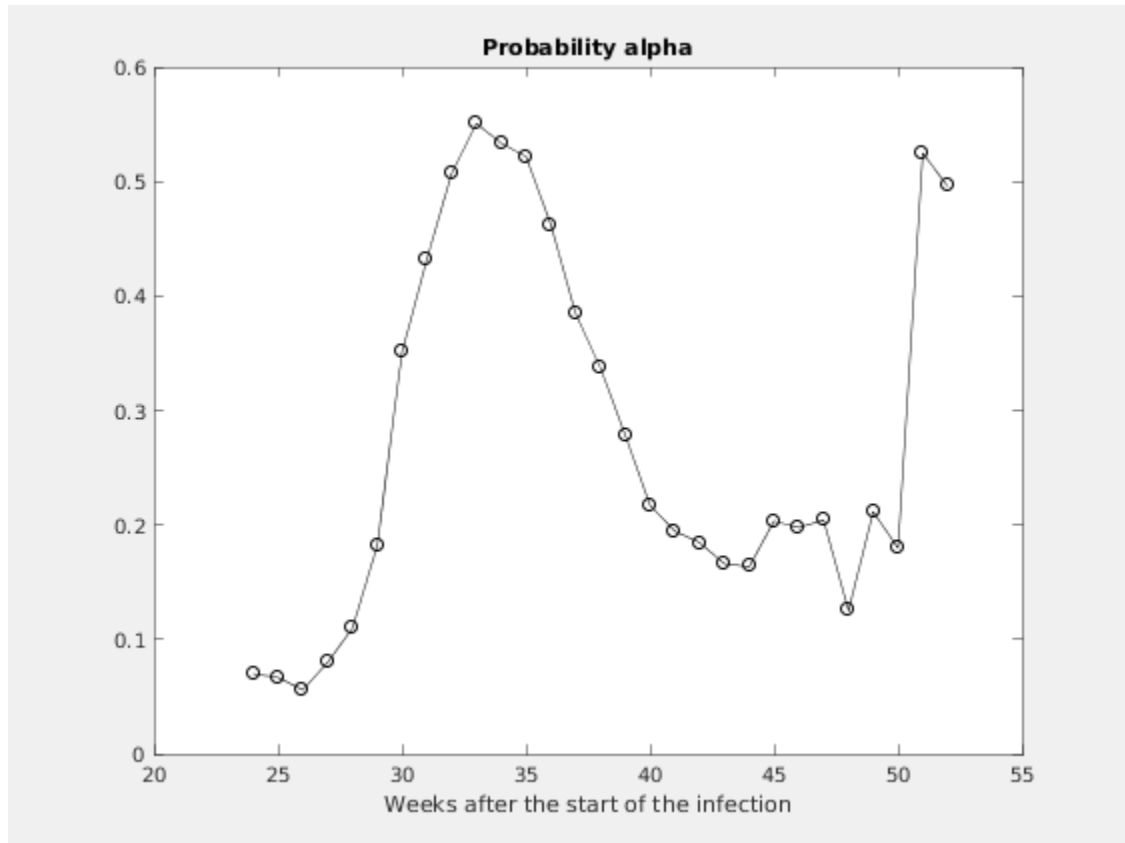
Figure 2.2. Figure

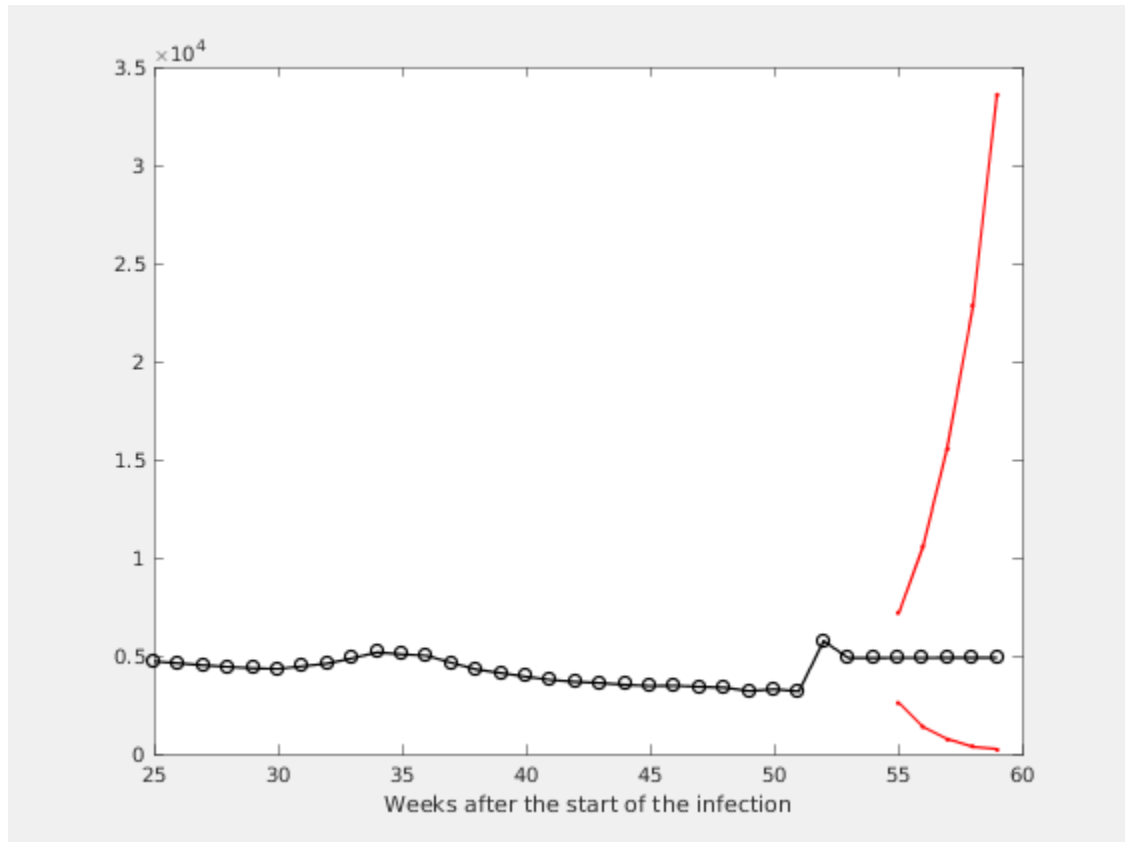**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**
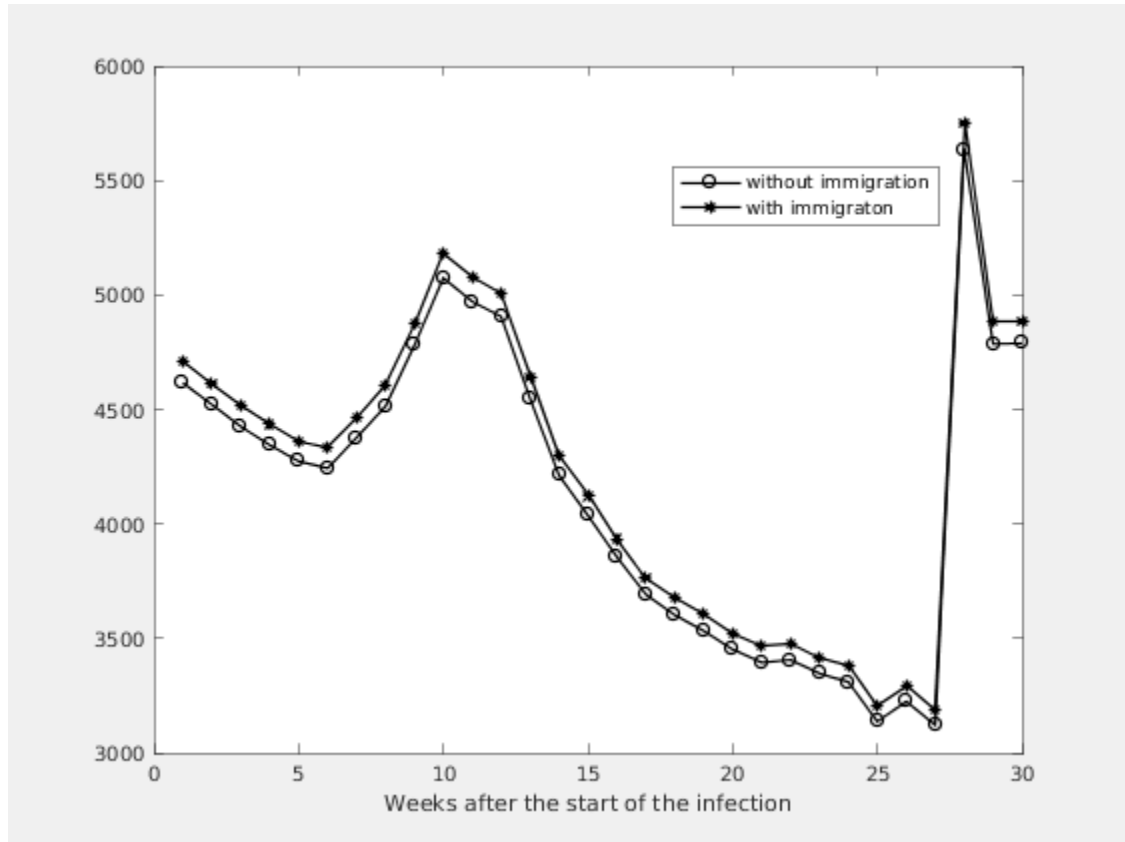
Figure 2.4. Expected number of the nonregistered infected individuals with immigration

Estimation of the model parameters.

```
 k |    m     |           ci        | alpha  |  A1  |   M1  |
---------------------------------------------------------
 4 |  0.9855  | 0.4971 - 1.4739 | 0.2044 | 3378 | 3309  |
 3 |  0.9849  | 0.5025 - 1.4672 | 0.1251 | 3202 | 3137  |
 2 |  1.0064  | 0.5295 - 1.4834 | 0.2115 | 3291 | 3225  |
 1 |  1.0005  | 0.5294 - 1.4717 | 0.1799 | 3186 | 3121  |
 0 |  1.0005  | 0.5204 - 1.4806 | 0.5246 | 5753 | 5636  |
```