

Branching stochastic processes as models of Covid-19 epidemic development

Portugal - 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 Portugal. 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

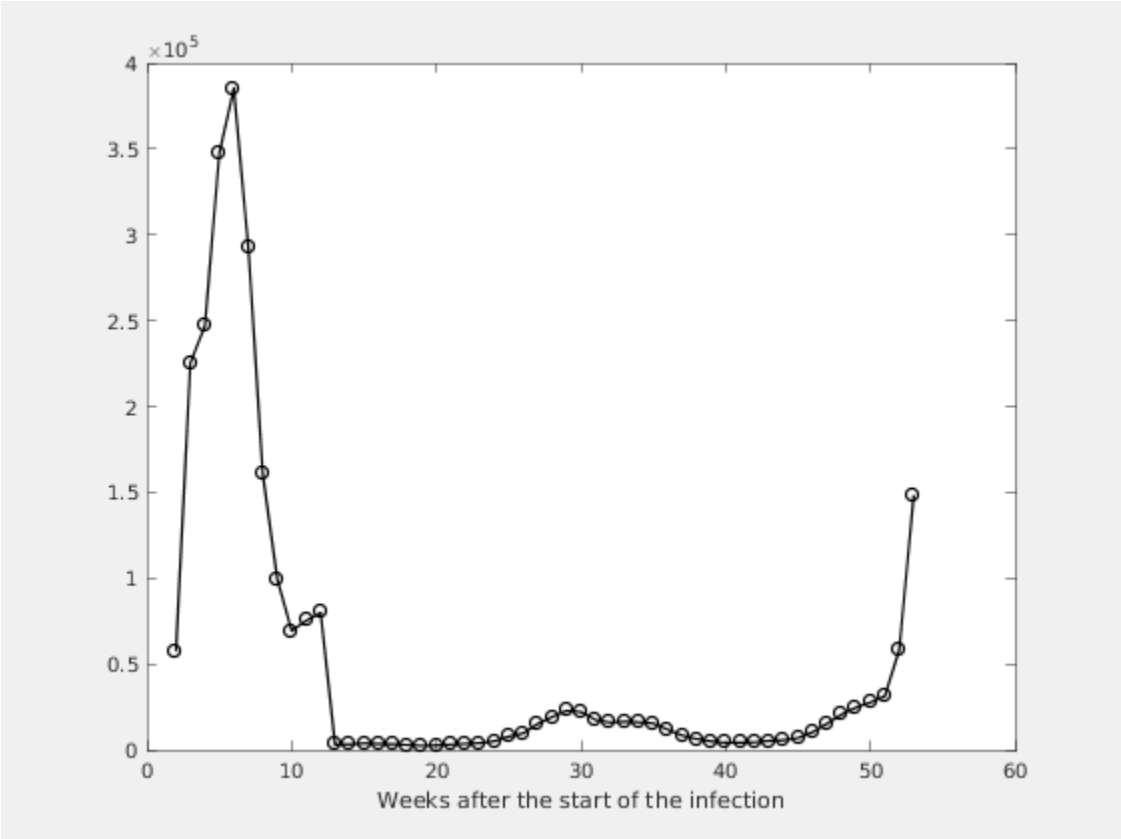
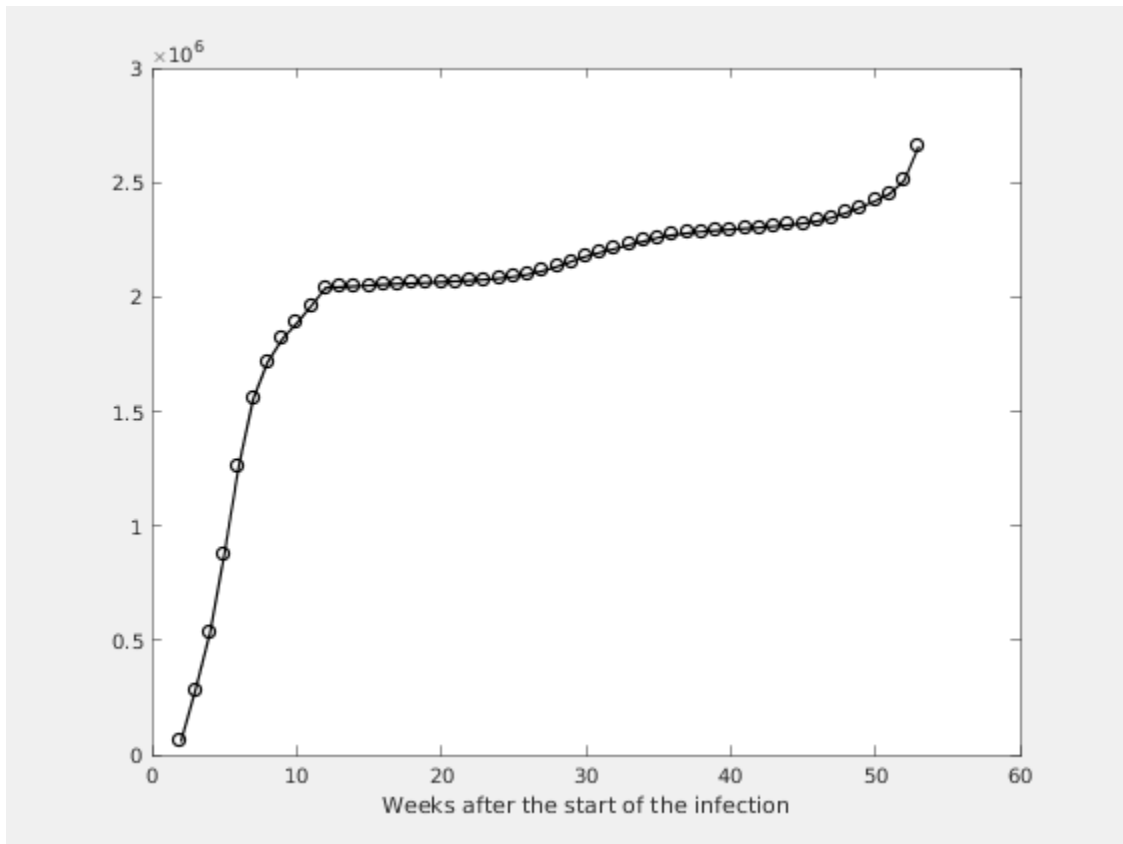


Figure 1.2. Number of the total registered cases



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

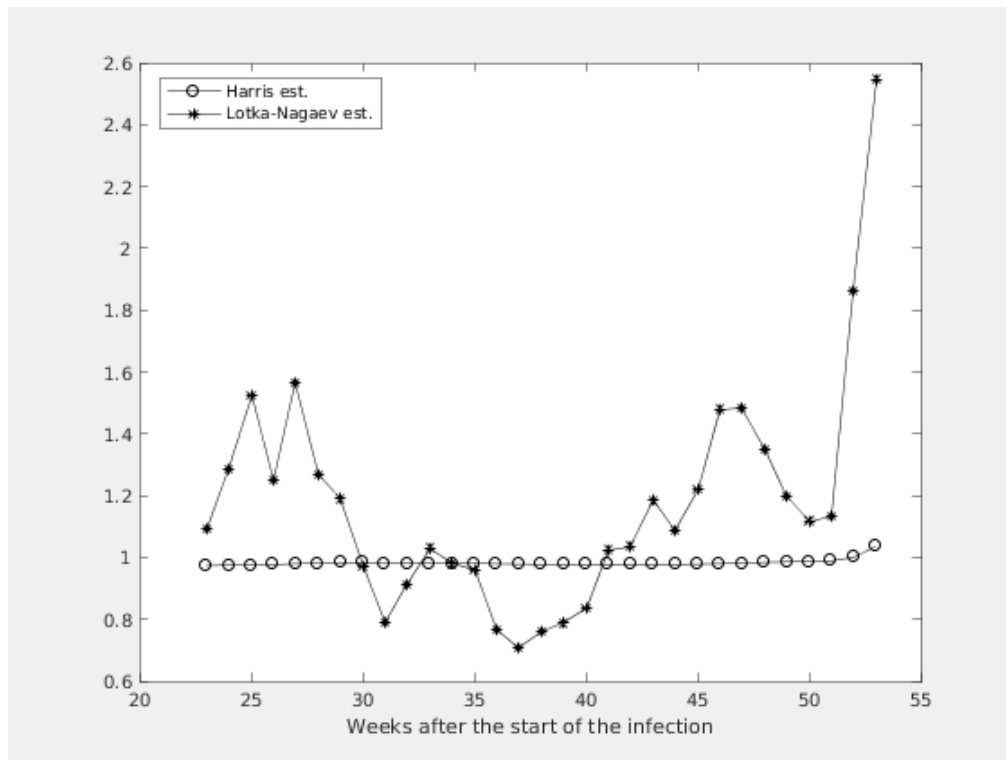


Figure 2.2. Figure

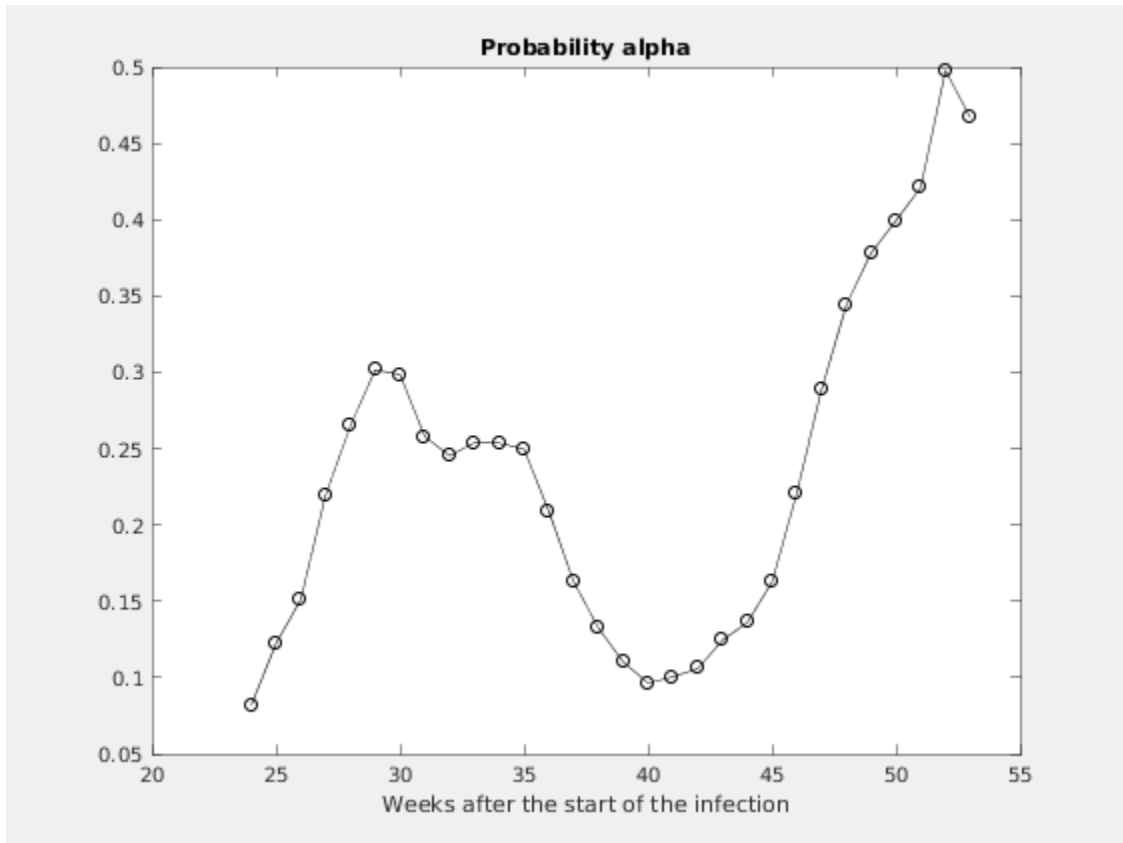


Figure 2.3. Expected number of the nonregistered infected individuals without immigration

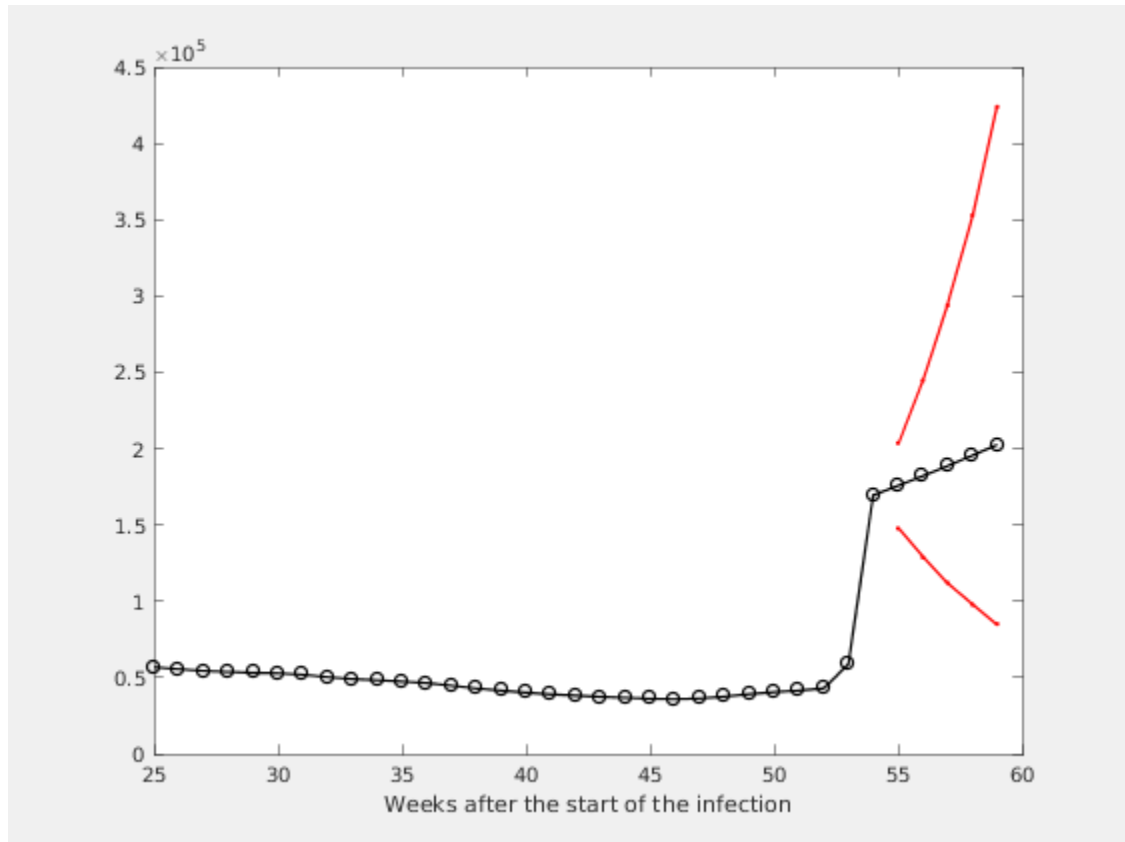
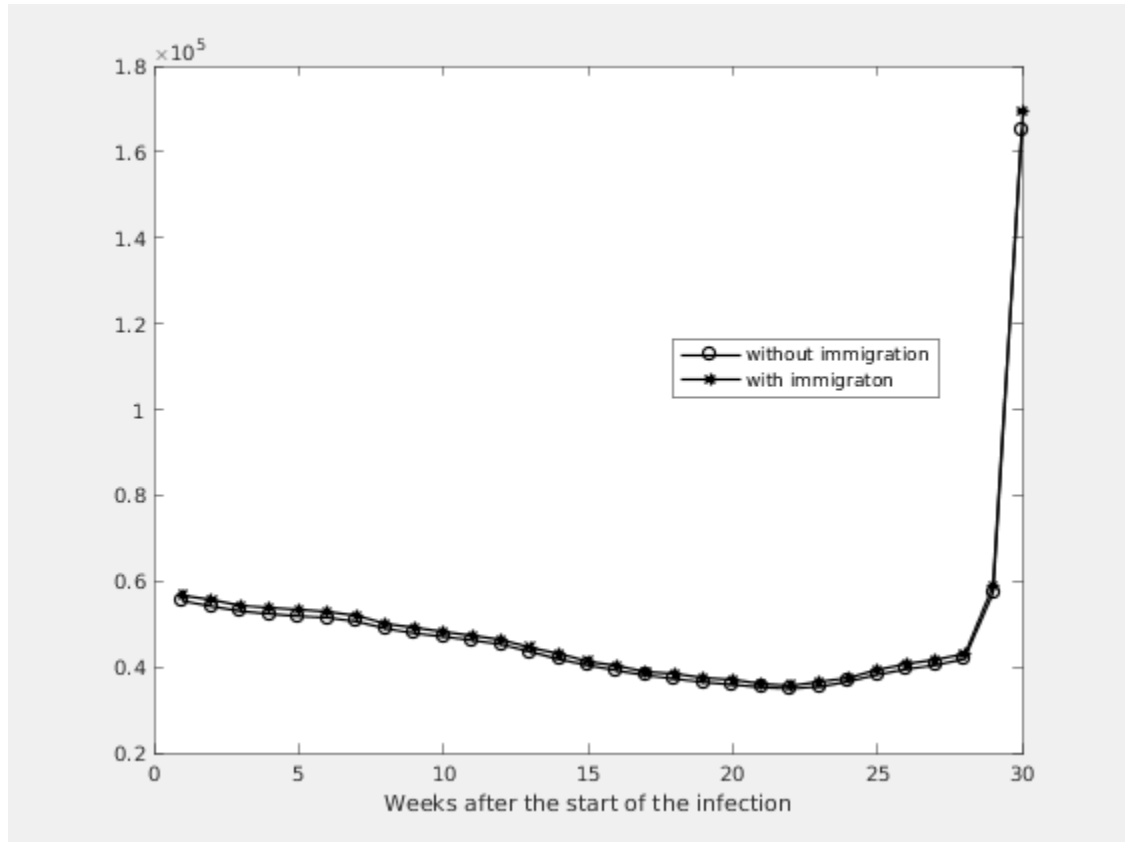


Figure 2.4. Expected number of the nonregistered infected individuals with immigration



Estimation of the model parameters.

k	m	ci	alpha	A1	M1
4	0.9861	0.8213 - 1.1510	0.2887	37576	36628
3	0.9875	0.8248 - 1.1502	0.3443	39209	38219
2	0.9892	0.8288 - 1.1495	0.3783	40530	39507
1	1.0003	0.8424 - 1.1583	0.3994	41493	40445
0	1.0362	0.8802 - 1.1923	0.4213	42949	41865