

# **Branching stochastic processes as models of Covid-19 epidemic development**

**Jersey - week 53**

**N. Yanev, V. Stoimenova, D. Atanasov**

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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 Jersey. 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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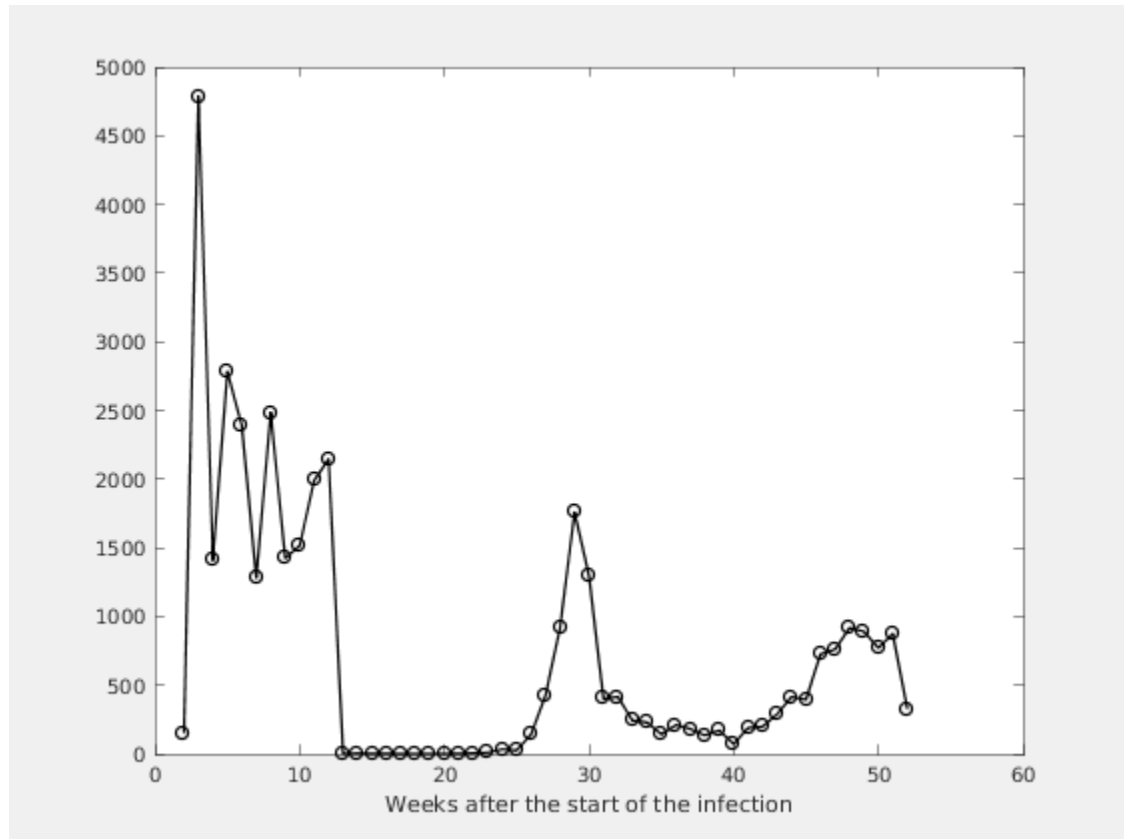
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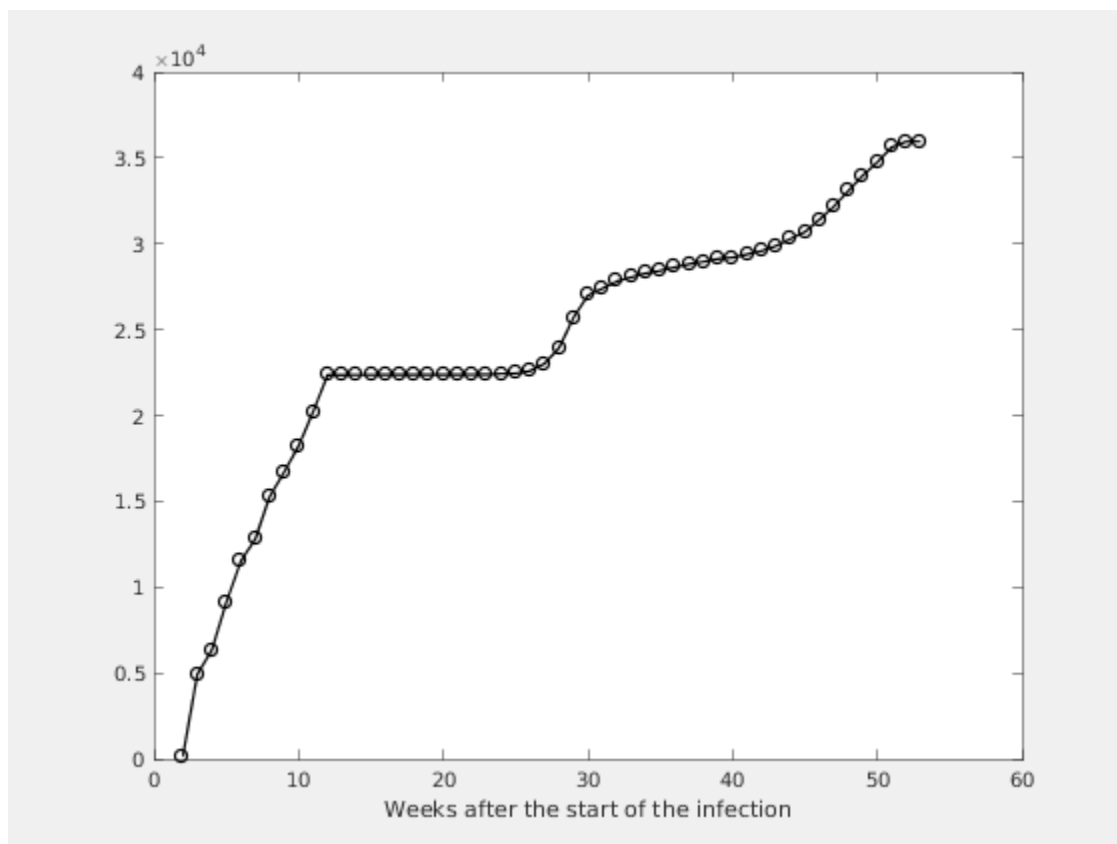
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# Chapter 1. Observed Infection data

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



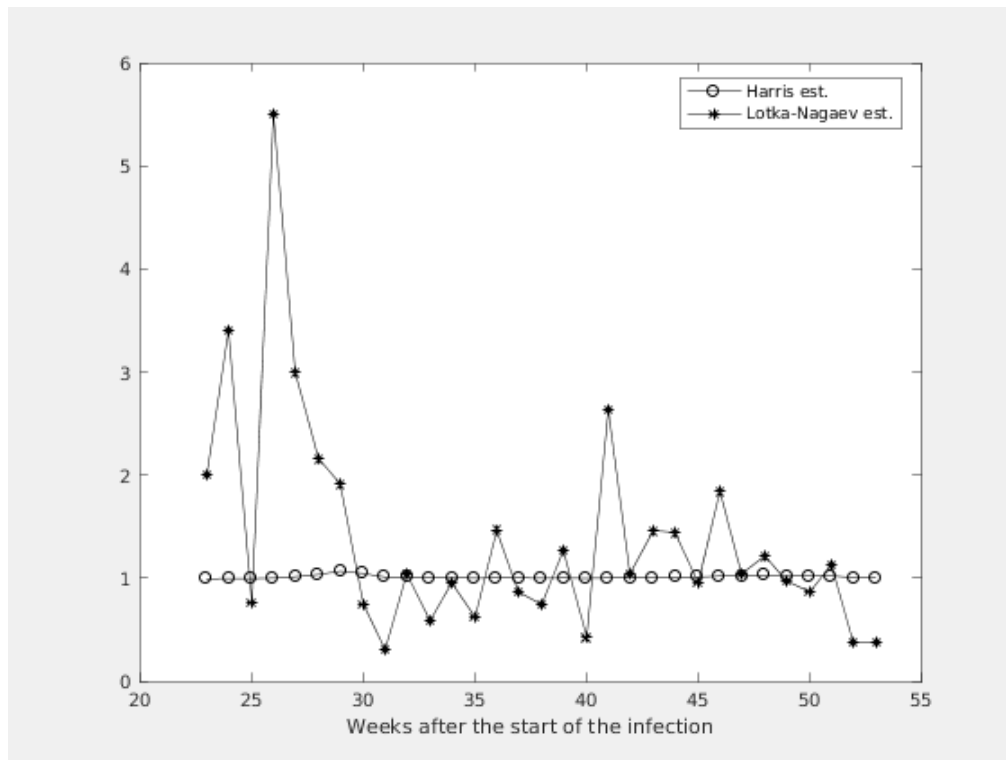
**Figure 1.2. Number of the total registered cases**



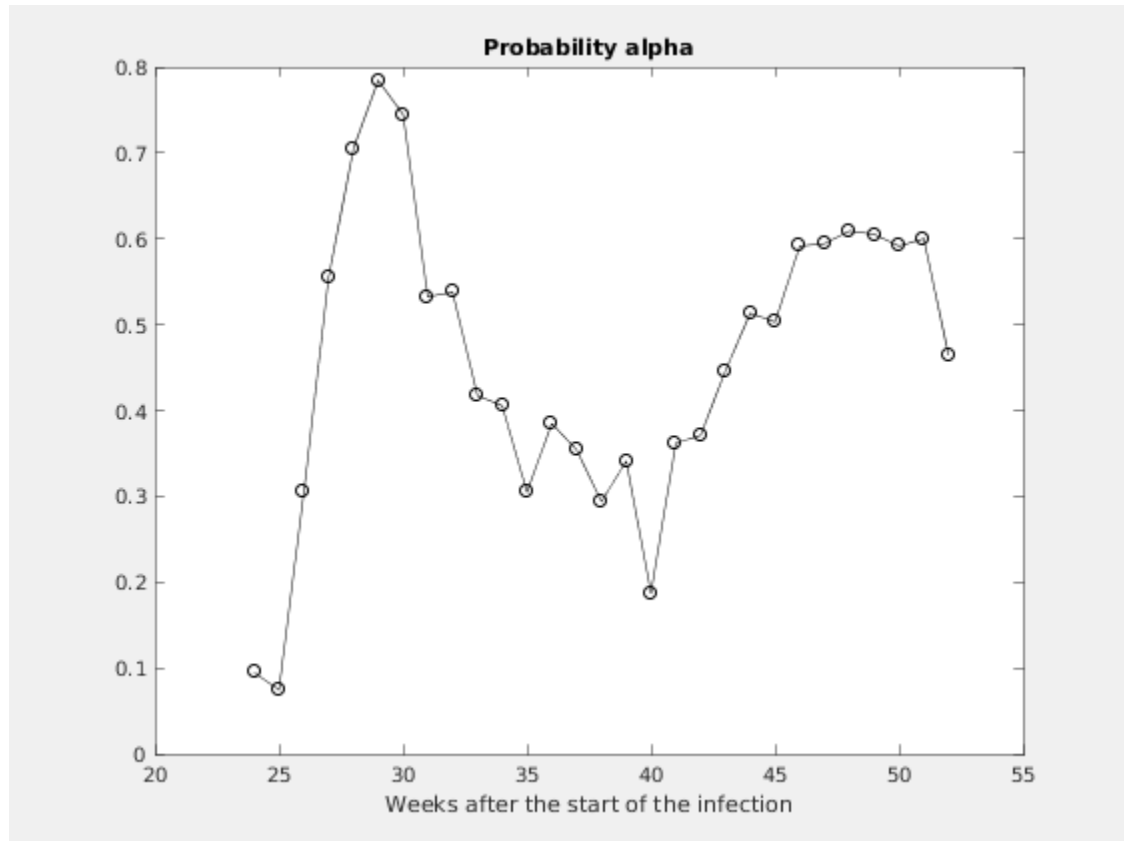
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## Chapter 2. Estimating of the main parameter and some predictions

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

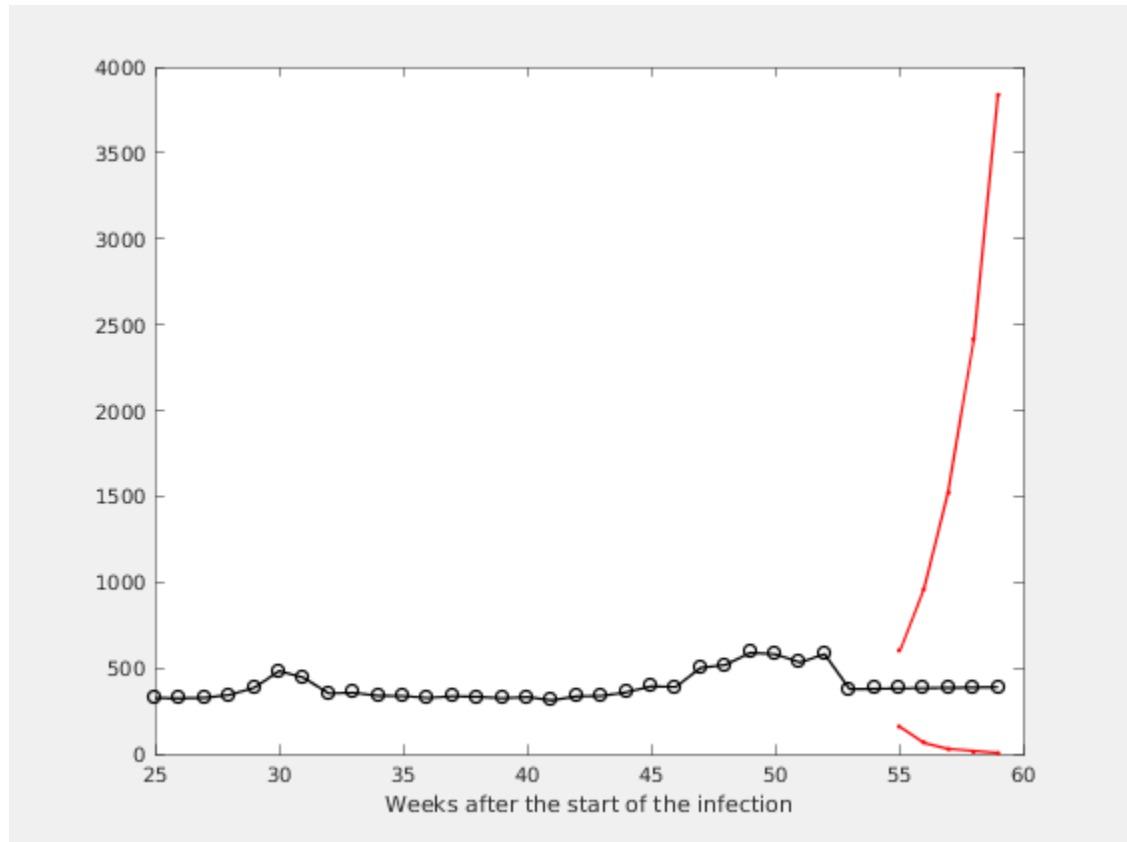


**Figure 2.2. Figure**

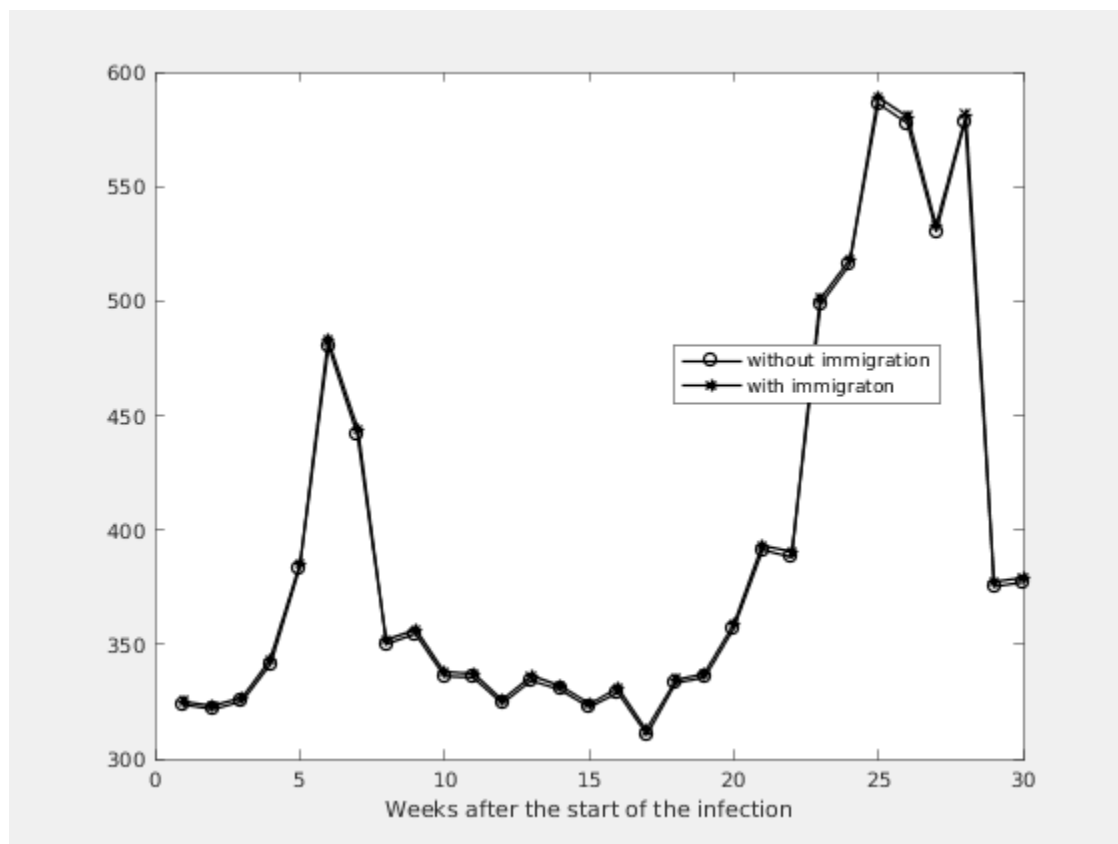




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0223	0.3670 - 1.6777	0.5945	518	516
3	1.0183	0.3779 - 1.6587	0.6090	589	586
2	1.0208	0.3962 - 1.6453	0.6052	581	578
1	1.0049	0.3952 - 1.6147	0.5915	533	530
0	1.0049	0.4083 - 1.6016	0.6002	582	579