

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

**Togo - 20201214**

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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 Togo. 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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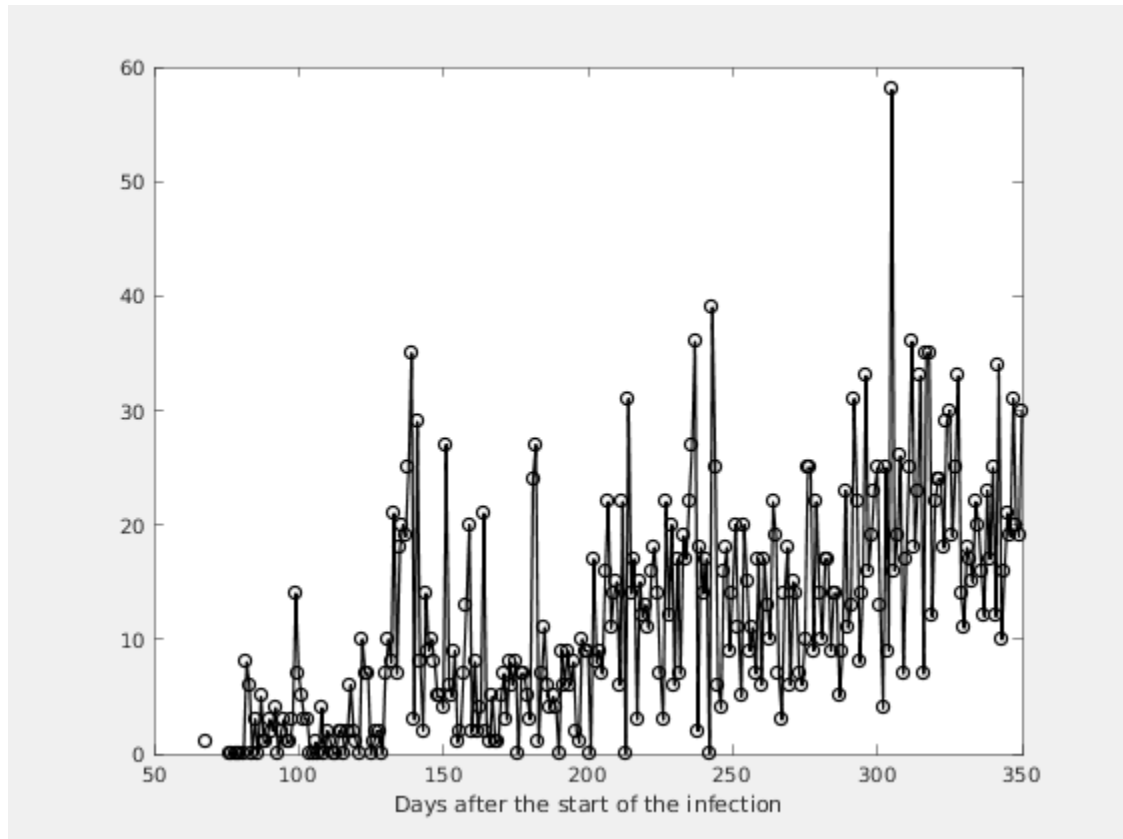
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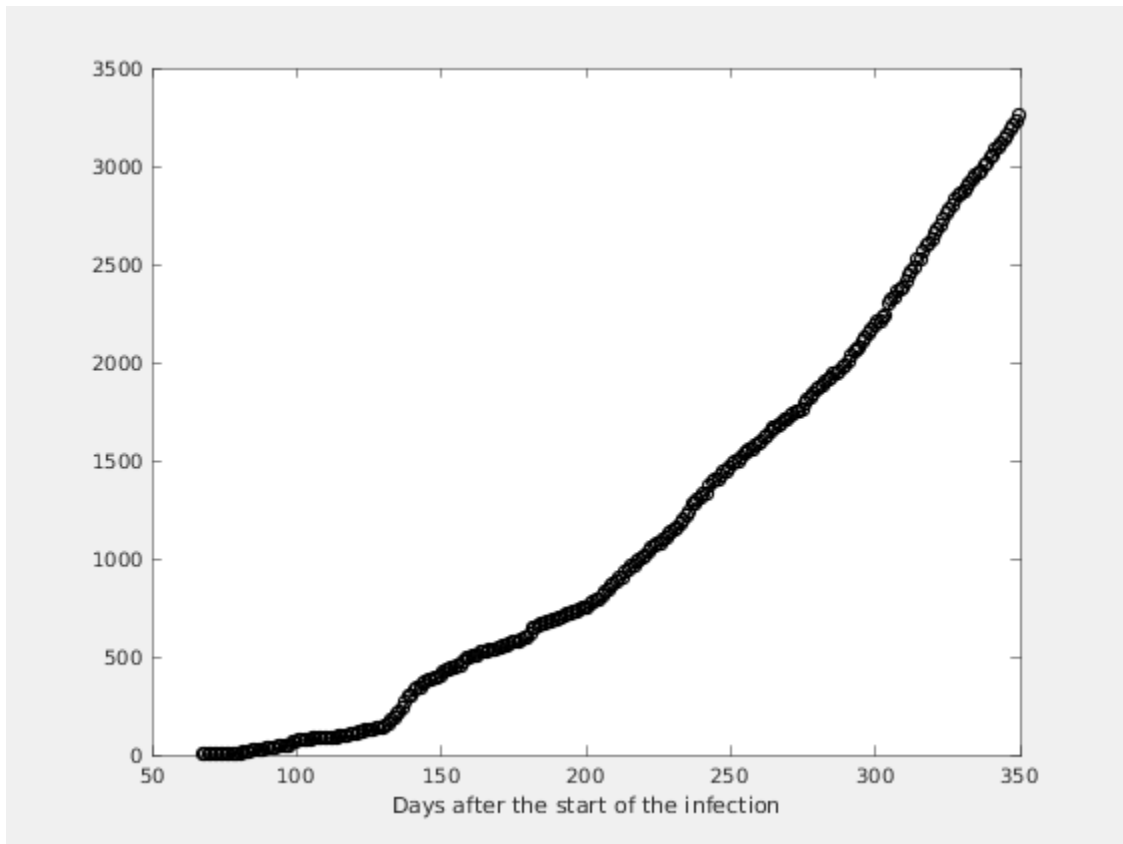
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# Chapter 1. Observed Infection data

Figure 1.1. Number of the daily 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

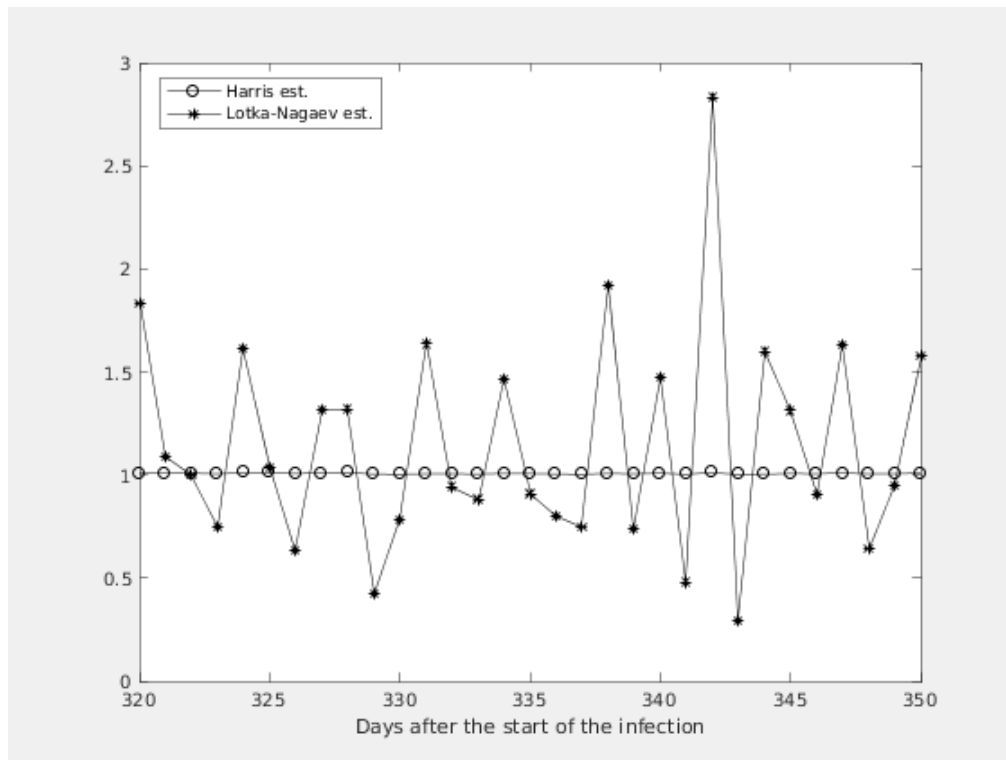
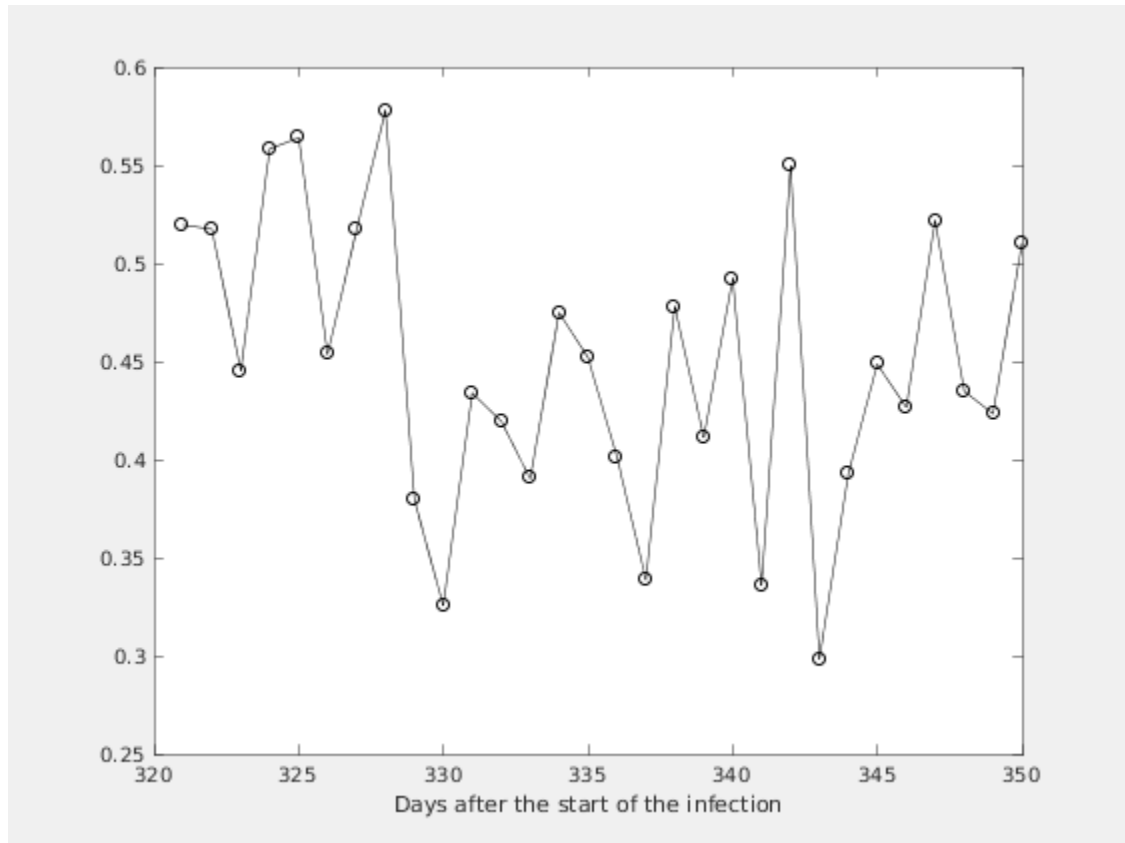
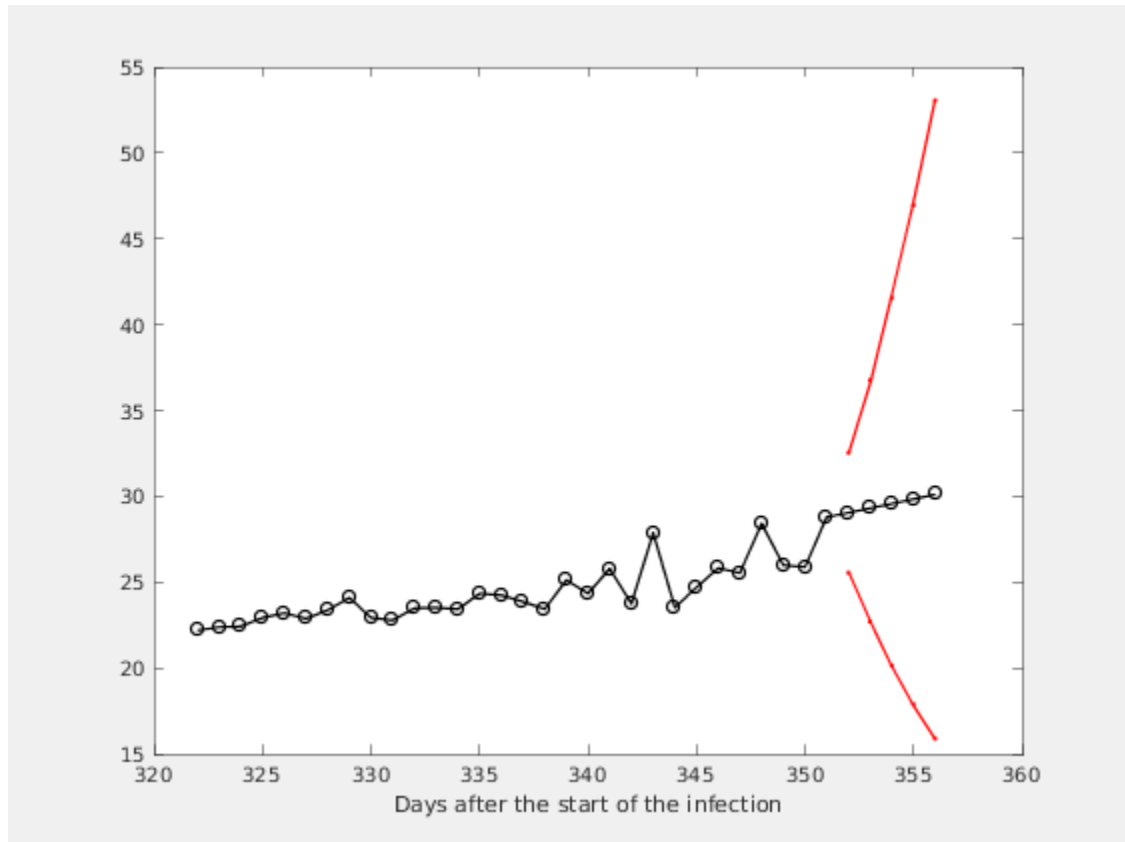


Figure 2.2. Figure

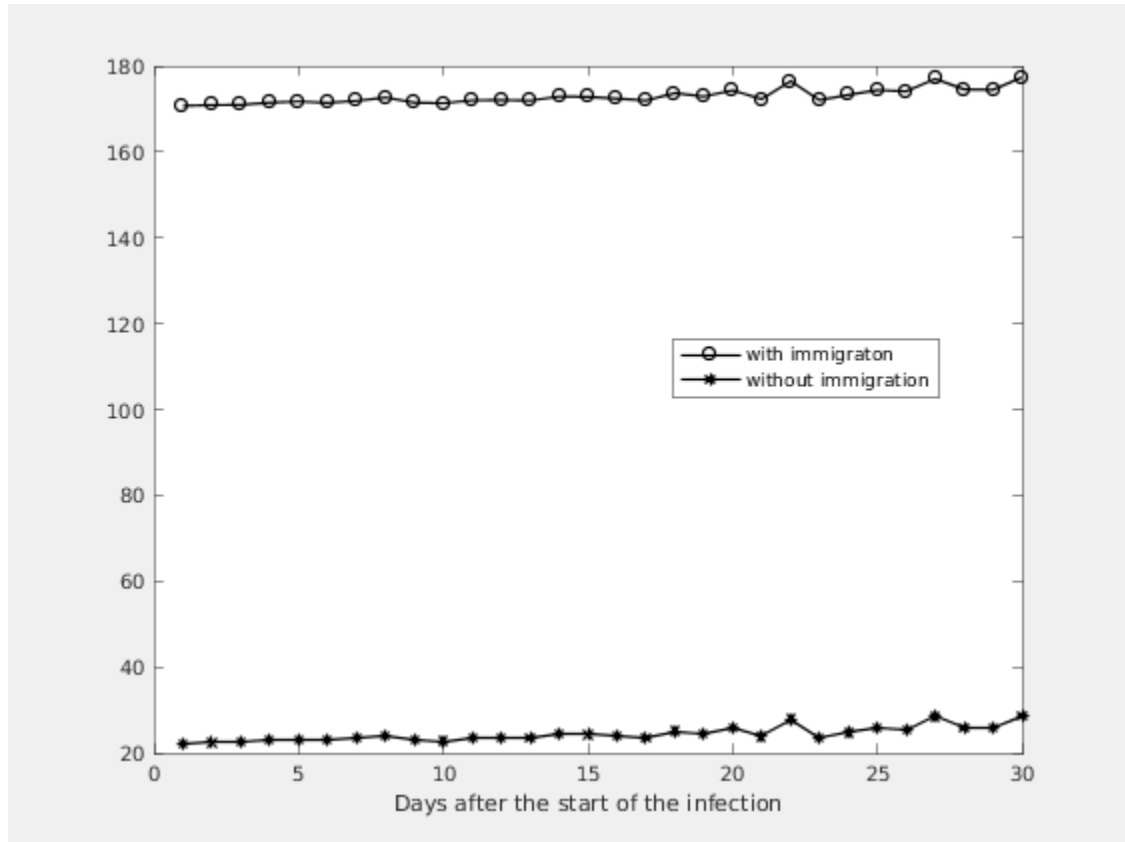




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	M1	A1
4	1.0057	0.8811 - 1.1304	0.3931	25	173
3	1.0095	0.8854 - 1.1336	0.4485	26	174
2	1.0060	0.8825 - 1.1294	0.4266	26	174
1	1.0056	0.8826 - 1.1286	0.5218	28	177
0	1.0090	0.8868 - 1.1312	0.4349	26	175